UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
901 N. 5th STREET
KANSAS CITY, KANSAS 66101

AIR PERMITTING AND
COMPLIANCE BRANCH

November 9, 2006

Clark Duffy
Kansas Department of Health & Environment
Bureau of Air and Radiation
1000 S.W. Jackson Street, Suite 310
Topeka, KS 66612-1366

Dear Mr. Duffy,

We appreciate the opportunity to review and provide comments on the proposed PSD permit for the Sunflower Holcomb Station Expansion Project. Our comments focus on recommendations to improve the enforceability of permit conditions, highlight concerns about the SO_2 BACT limit and offers suggestions for the continuous emission monitoring portions of the permit.

The underlying assumptions used in the SO_2 BACT analysis continues to be our most significant concern. This issue, which we describe in detail in Attachment A and was discussed during the Sunflower pre-application meeting, is one which we have commented on in previous coal-fired projects in Region 7. We hope our analysis helps inform applicants and permit review agencies on a more appropriate selection of the baseline sulfur potential for coal from the Powder River Basin. We encourage KDHE to carefully consider our comments and either establish a firm performance requirement for the scrubber or a range of BACT limits corresponding to the fuels that will be combusted in the Holcomb units. We intend to make similar comments on the other coal-fired projects now under consideration and plan to share these comments with the other Region 7 states.

As always, we appreciate KDHE's efforts in carrying out the PSD program. If you have any questions, please contact Jon Knodel at (913) 551-7622 or at knodel.jon@epa.gov.

Sincerely,

JoAnn Heiman, Acting Chief
Air Permitting and Compliance Branch

Attachments:

Attachment A – EPA Region 7 Comments on Sunflower Holcomb Station Expansion Project for New Units H2, H3 and H4

Attachment B – SO_2 Baseline Emissions at Region 7 NSPS Subpart D Units

Attachment C – SO_2 Emissions at Public Power Plants in Region 7

Attachment D – Sunflower Holcomb Summary of Subpart Da Emission Reports from July '98 through June '06

Attachment E – Burlington Northern “Guide to Coal Mines” Analysis

Attachment F – Excerpts from KCPL-Hawthorn Scrubber Performance Analysis

Attachment G – Excerpt from City Utilities of Springfield “BACT Emission Limitations for PC Boilers Firing Western Subbituminous Coal”

Attachment H – Excerpts from Draft PSD permit for Longleaf Energy Associates, LLC C/o LS Power Development, LLC

Attachment A
EPA Region 7 Comments on
Sunflower Holcomb Station Expansion Project
for New Units H2, H3 and H4

SO2 BACT and Baseline Assumptions

The SO_2 baseline selected by Sunflower Holcomb to evaluate BACT appears not to be representative of the Powder River Basin (PRB) coals historically used in Region 7, including Holcomb Unit 1, and should be reevaluated consistent with the comments below.

The department proposes a SO_2 BACT limit of 0.095 #/mmBtu, 30-day rolling average. The limit is premised on the use of a worst case "baseline" fuel with a SO_2 inlet potential of 1.23 #/mmBtu in conjunction with a 92 percent removal using a dry spray dry adsorber (SDA).

The BACT limit would apply at all times, except during periods of startup, shutdown, and malfunction. In the absence of a percent removal requirement the BACT limit would presumably allow for lesser scrubber performance if lower sulfur fuels are burned. While conceivable that Sunflower Holcomb might have occasion to use a higher sulfur coal, during periods when the lower sulfur coal is unavailable or otherwise uneconomical, or when they blend with bituminous fuels as a mercury reduction strategy, the long term use of such a baseline fuel appears to be unlikely based on historical trends observed over the last 26 years for uncontrolled NSPS utility boilers in Region 7.

To help determine what an appropriate baseline for PRB coal might be, we looked at CEMS data for all uncontrolled NSPS Subpart D utility boilers from 1980 through 2005. The data indicate that SO_2 inlet concentrations range from 0.62 to 0.87 #SO_2/mmBtu, annual average, respectively. In the years prior to implementation of the acid rain program, uncontrolled NSPS utility units in Region 7 burned coal with a SO_2 potential of 0.73 - 0.87 #SO_2/mmBtu, with the trend generally declining. In the years following implementation of the acid rain program, uncontrolled NSPS utility units in Region 7 burned coal with a SO_2 potential of 0.62 - 0.71 #SO_2/mmBtu, again with a lowering trend. Despite the requirement to comply with the 1.2 #SO_2/mmBtu standard under NSPS Subpart D and to hold sufficient allowances under the title IV Acid Rain Program, it appears these units continue to make fuel choices, based on other incentives that result in SO_2 emissions well below their compliance obligations. This indicates that such coals are readily available and have been for many years. Please see Attachment B for more details.

Between 1995 and 2005, the highest average SO_2 inlet concentration for a single, uncontrolled NSPS unit in Region 7 was 0.81 #SO_2/mmBtu. This occurred at the Nearman Creek facility in Kansas City, Kansas in 2002. Nearman Creek is appropriate for comparison to the Sunflower Holcomb Power Station since both are public power facilities and both likely face similar constraints when purchasing compliance coal (e.g. low bid contracts, small purchaser). All annual average emissions data evaluated since 1995 were at or below 0.81 #SO_2/mmBtu. Likewise, all emissions data analyzed for uncontrolled NSPS Subpart D utility boilers since 1990, including over 217 utility years of certified emissions data, were below a maximum annual potential SO_2 inlet concentration of 0.92 #SO_2/mmBtu. Given the long history and utility-wide nature of this information, it appears that the baseline used in the Sunflower Holcomb SO_2 BACT demonstration may not be representative of pre-control emissions expected while combusting PRB coal.

But, annual average SO_2 inlet concentrations may not tell the whole story. Sulfur in coal is variable and can impact short term emission averages. Over longer averaging periods the effects of variability are minimized. Since BACT emission limitations generally must be established using shorter term averages, adjustments to the annual average data may be appropriate. To estimate the magnitude of an annual-to-30-day-rolling-average adjustment, we looked at the monthly variability for the Nearman plant and seven other public power facilities in Region 7 from 1997 through 2002. During this period, monthly emissions – which are similar to those that might be observed using a 30-day rolling average – showed 97% of the SO_2 concentrations were less than 0.82 #SO_2/mmBtu and 99% were less than 0.90 #SO_2/mmBtu. Two of the 846 utility-months of data analyzed had SO_2 inlet concentrations greater than 1.0 #SO_2/mmBtu and were clearly outliers. See Attachment C for a summary of the analysis.

While clear that utilities included in the Region 7 analysis have periodically used higher sulfur fuels during times when their preferred fuel supply was unavailable, these infrequent events should not serve as the basis for setting a long term BACT standard. In fact, these periods of higher emissions are already reflected in the annual and monthly data analyses described above. Again, this analysis shows that the baseline used in the Sunflower Holcomb SO_2 BACT demonstration may not be representative of pre-control emissions likely to occur while combusting PRB coal. It is also important to note that when multiple assumptions are used to determine a BACT emission limit they should be evaluated on a consistent time basis. In this case, the BACT limit is derived from applying a 92% removal efficiency to a design sulfur inlet concentration. But, if the 1.23 #SO_2/mmBtu value presented by Sunflower represents a short-term, peak (e.g. instantaneous or1-hr) inlet concentration and the 92% spray dry adsorber (SDA) removal efficiency represents performance over an extended period such as a year, then this apples-to-oranges comparison does not provide a meaningful result. Scrubber performance is usually based on long term performance guarantees and can have higher performance results over the short term. When considered together on a consistent time basis, long term scrubber performance and inlet SO2 potentials appear to result in a substantially lower SO_2 BACT limit than proposed in the PSD permit.

In Footnote 3 of "Supplement 3 – Summary of Permit Activity Since Completion of BACT", Sunflower notes the Holcomb Expansion Project, including new Units H2, H3, and H4, has been planned to make maximum use of existing on-site fuel and reagent supplies and handling equipment and will utilize the same supplies of approximately 0.5 percent western low sulfur coal. While past performance doesn't necessarily indicate future performance, it is instructive to look at look at historical emission trends when determining if the assumptions used in the BACT analysis are reasonable. To better understand performance at Holcomb Unit H1 over the past several years, we used Sunflower's quarterly NSPS Subpart Da emission reports to compile a summary of daily, 30-day compliance averages, for Sunflower H1 from July, 1998 to the present. These analyses offer insights on trends of inlet and outlet SO_2 concentrations, the effectiveness of the dry scrubber and outlet NO_x and CO emissions.

In general, pre-control inlet SO_2 concentrations at Holcomb are consistent with those observed at other Region 7 utilities using PRB coal. Inlet SO_2 concentrations, based on 2,620 daily observations made by certified CEMS, range from 0.50 to 0.95 with over 99% of the data below 0.91 #SO_2/mmBtu. These data suggest that the design baseline for Holcomb Units H2, H3 and H4 may be too high and should be re-evaluated in light of these actual on site data. Further, the Holcomb data indicates that had it complied with a 92% level of scrubber control – a hypothetical value based on the BACT level of control for the new units – it would have been able to meet a BACT limit of 0.075 #SO_2/mmBtu over 100 percent of its operating time. For more information, see excerpts from the spreadsheet titled "Sunflower Subpart Da Emissions Data.xls" in Attachment D and on the enclosed CD.

A report prepared by Burlington Northern and Santa Fe Railway, titled a "Guide to Coal Mines"[http://www.bnsf.com/markets/coal/pdf/mineguide.pdf], offers additional insights into coal quality in the region. The report contains general information on the coal mines it serves, many of which are located in the Powder River Basin regions of Wyoming and Montana. We extracted pertinent data for each of the mines and prepared a summary report which is included in Attachment E. The summary shows the SO_2 equivalent of PRB-Wyoming to be 0.74 - 0.76 lbSO_2/mmBtu, on average. These BNSF data suggest that at a 92% control efficiency or better, the corresponding emissions would be in the range of 0.06 #SO_2/mmBtu on a 30 day rolling average.

Setting SO_2 BACT at 0.095#SO_2/mmBtu, without a corresponding percent reduction requirement, effectively allows Sunflower to operate the SDA at an efficiencies of 83.8% and 90.3% when burning PRB coals with an average SO_2 inlet concentration of 0.59 #SO_2/mmBtu and 0.98 #SO_2/mmBtu, respectively. These SO_2 inlet concentrations represent the average and worst case monthly average inlet concentrations for all NSPS Subpart D affected public power units in Region 7 between 1997 and 2005. If realized in practice, this level of scrubber performance falls well short of the long-term design performance anticipated for a SDA as BACT. We have observed this trend first hand at the Kansas City Power and Light Hawthorn Unit 5, where the BACT emission limitation was based on a "worst-case" PRB design baseline that has yet to be utilized. Since 2003, Hawthorn has achieved sustained removal efficiencies of 77 - 82%. Because the permit provides no incentive to reduce further, Hawthorn appears to be operating the scrubber well below its design capability even though it is meeting its BACT limit. Portions of this analysis can be found in Attachment F.

The Sunflower application and permit record could benefit from further evaluation of "better than 92 percent" BACT strategies for SO_2. The application and permit record make only brief mention of more rigorous removal options but provide no meaningful discussion on why these strategies were eliminated. However, recent permitting actions for Newmont, LS Power Longleaf, and even the City Utilities of Springfield Southwest projects evaluated, and in some cases established, "effective" removal efficiencies higher than 92 percent. All concluded that 92 percent, or better, removal is technically and economically feasible with adequate margin of compliance safety. City Utilities of Springfield, for example, prepared a detailed analysis titled "BACT Emission Limitations for PC Boilers Firing Western Subbituminous Coal" [see Attachment G] in support of the PSD permit for its Southwest Power Station. Even though the analysis suffered from the same flaw on PRB baseline coal concentration described above, the study concluded that downtime to complete routine scrubber maintenance, swap out atomizers, and maintain a continuous 94 percent control efficiency would impact its ability to maintain an adequate compliance safety margin. For these reasons, the study concluded that 92 percent control represented BACT. More recent permitting actions at Newmont and LS Power Longleaf conclude that scrubber performance in the 93.5 to 95 percent range should be attainable.

To determine if existing data for the Holcomb and Hawthorn units might help inform the record, we looked at scrubber performance for both units. In general, we concluded that while interesting, the data are not that instructive in setting BACT for the new Holcomb units. The existing Holcomb unit is subject only to a 70% control requirement under NSPS Subpart Da and therefore has had little incentive to control beyond. In 2001 to the present, about the time Sunflower sought approval of its original Sand Sage project, it appears Holcomb began experimenting with the scrubber to achieve higher efficiencies. As a result, the unit experienced even lower SO_2 emissions for the past couple of years. Likewise, as indicated above, KCPL Hawthorn has experimented with its scrubber to achieve high rates of removal over short periods of time, but because neither unit has adequate incentives, the scrubber data, in general, do not appear to reflect the effectiveness we would anticipate from a modern dry scrubber design. Therefore, these data do not help to inform the BACT record significantly. We encourage Sunflower to undertake an analysis similar to those for Newmont, LS Power Longleaf, and City Utilities of Springfield, using the proper baseline coal, to document if higher scrubber efficiencies can be maintained, and if not why not.

To compensate for potential under performance of the SDA while burning lower sulfur PRB coals, we believe the final permit should condition Sunflower Holcomb to achieve a 92% reduction, or better, based on a 30-day rolling average, in addition to the appropriate BACT emission limitation. To assure that the SDA is operated in a highly effective manner during all periods of operation, the permit should also require Sunflower Holcomb to install, operate, maintain, and quality assure an inlet SO_2 CEMS, in addition to the required stack CEMS, to verify that performance across the SDA is achieved. Since these CEMS are already required by NSPS Subpart Da, it should not be an imposition to include in the permit.

In the alternative, if the department decides not to establish an on-going SDA performance requirement as part of the permit, then we believe it is essential that the department establish a series of BACT emission limitations for each coal, or blends, with unique SO_2 inlet concentration characteristics. For example, if Sunflower Holcomb anticipates they may utilize a PRB coal, or bituminous blend, with a 1.23 #SO_2/mmBtu inlet concentration, then a BACT limit of 0.095 may be appropriate during those limited periods of time. On the other hand, if Sunflower Holcomb combusts PRB with sulfur characteristics more typical of those burned by

Holcomb and similar utilities throughout the region, then a SO_2 emission limitation of 0.060 – 0.075 #SO_2/mmBtu appears to be a more appropriate BACT limit. A good example of this tiered approach was proposed by LS Power Longleaf. This project is currently undergoing public comment at the Georgia Department of Natural Resources and the relevant excerpts can be found in Attachment H. This permit is particularly interesting because many of the key design features, including the type of fuel and control technologies, are similar to those proposed by Sunflower. In brief, the Georgia permit establishes three SO_2 BACT limits, premised on a 93.5% removal efficiency, that vary depending on the SO_2 inlet concentration to the boiler. The proposed permit limits, while derived in a different manner than we describe above, are consistent with those we recommend above.

In summary, we believe it is inappropriate to establish BACT on a set of factors that occurs less than one percent of the time and thus undermines a BACT level of control during the remaining 99 percent of normal operations. Based on the Sunflower permit record and our review of other similar projects in the Region, the 0.095 # SO_2/mmBtu BACT limit, by itself, does not effectively implement a BACT level of control over the variability of fuel inputs Sunflower may choose to use. Therefore, we recommend that the department establish an explicit SO_2 percent removal requirement, no less than 92%, or in the alternative two or more BACT limits that reflect at least 92% control over a range of SO_2 inlet concentrations. We want to make clear that it is not our intent to limit Sunflower's fuel flexibility to use a range of low sulfur PRB coals or other modest low sulfur bituminous blends, but rather to assure that a BACT level of control is achieved at all times.

As a general disclaimer, we clearly understand that the proposed Sunflower Holcomb units are not uncontrolled utility boilers subject to NSPS Subpart D. Nevertheless, the data analyzed for Holcomb and other units in the Region are highly informative on SO_2 inlet potential concentration for units combusting PRB coal and should not be overlooked. To assist the department in its investigation of the baseline coal issue, the enclosed CD-ROM contains the spreadsheets with all of the analysis described above.

Continuous Particulate Matter Monitoring (PM-CEMS)

In 2004, EPA promulgated final performance specifications, PS-11, for installation, operation, maintenance, and quality assurance of continuous particulate matter emission monitoring systems (PM-CEMS). For a number of reasons, we believe the proposed Sunflower Holcomb units are capable of installing this equipment and pushing the knowledge base forward. First, these are state-of-the-art utility boilers which will benefit from a host of new technology. Since the PSD program is meant to be technology forcing, requiring a PM-CEMS would be consistent with that goal. Second, utilities can emit large amounts of particulate matter when control devices are not functioning correctly. The PC-CEMS is a valuable tool to help enhance baghouse performance while also providing direct information to verify that the unit is meeting its PM BACT emission limitation. Third, utility companies typically have very experienced instrumentation staff. Sunflower is no exception, having nearly 30 years of experience operating a Subpart Da CEMS network and another 10 years running the sophisticated acid rain monitoring equipment. Sunflower clearly has the expertise to manage the acquisition, installation, operation of complicated monitoring technology and oversee the critical testing that is essential to the proper functioning of the PM-CEMS. Fourth, utility companies typically have the economic resources to purchase complicated monitoring technologies and the support necessary to ultimately make them work. Fifth, Sunflower has demonstrated leadership in the past on a number of technical initiatives with the Electric Power Research Institute and the Department of Energy. We'd like to encourage this same level of exploration to move the PM-CEMS technology forward. Sixth, these devices have been required as part of the national power plant enforcement cases and most of the recently issued PSD permits. We want to see this trend continue and encourage all of the Region 7 states to promote PM-CEMS for large coal-fired utility projects. Lastly, the coarse filterable PM limit in “Air Emission Limitations” 2c. lends itself to measurement using a PM-CEMS. When these factors are considered together, it seems appropriate to promote the technology and look for “beyond the NSPS” solutions. In that regard, we strongly encourage the department to work with Sunflower to incorporate PM-CEMs for the new Holcomb units.

CO BACT and Continuous Emission Monitoring

As part of our analysis of Sunflower quarterly Subpart Da emission reports, we looked at CO emissions reported for Holcomb Unit H1. Sunflower reports these emissions pursuant to its federal PSD permit. In general, the data indicate that CO emissions are very low, in the range of 0.02 to 0.05 #CO/mmBtu, 30 day rolling average. While not directly comparable to CO emissions from the new units, because of the low NO_x burner technology and selective catalytic reduction units proposed for the new boilers, it would be instructive to have similar monitoring information to assure compliance with the higher 0.15 #/mmBtu, short term average BACT limit. We recommend that KDHE replace the one time initial stack test under “Compliance and Other Performance Testing” Condition 1 with a requirement for Sunflower to install, calibrate, maintain, and quality assure CO-CEMS on each of the three new units. These continuous data provide valuable information which allows Sunflower to certify annual compliance under its Title V permit. CO data can often also assist the boiler operator to optimize combustion and maximize fuel efficiency. As part of this reconsideration, KDHE should determine whether it would be more appropriate to retain the short term averaging period and current proposed BACT limit or lengthen the averaging period (e.g. 30 day rolling) and lower the BACT limit since any variability in short term transient spikes would be flattened over time.

<u>CEMS... In General</u>

The permit requires installation of NO_x and SO_2 CEMS consistent with NSPS Subpart Da, but is silent on the use of the CEMS data for verification of BACT limits in the permit. We'd like to see an explicit statement in the permit that Sunflower will install, operate, maintain, and quality assure such CEMS to verify direct compliance with the BACT limits. This approach helps meet the compliance assurance monitoring (CAM) requirements under Title V, allows Sunflower to certify annual compliance with the permit limits, provides the public with direct compliance information and minimizes any confusion over the use of CEMS data at some later date. There is no doubt that the CEMS data constitute direct compliance data under NSPS Subpart Da, so it shouldn't be controversial to extend this clarification to the PSD permit as well.

<u>Boiler Operating Day</u>

The draft permit, under "Air Emission Limitations" Condition 2, 2nd paragraph, notes that "day" [as in boiler operating day] shall have the same meaning as in NSPS Subpart Da. For units constructed prior to February 28, 2005, a boiler operating day is one in which the boiler operates the entire 24-hour period. For new units constructed after that date, a boiler operating day is one on which the boiler operates for any period of time. Given the contentious nature of the Subpart Da revisions and uncertainty in how these issues might be resolved, we believe it is appropriate for the PSD permit to consider <u>all</u> periods of normal operation in the calculation of the 30-day rolling average, whether the boiler operates all 24 hours in a day or not. This approach assures that valid CEMS data are not arbitrarily discarded when determining compliance with the BACT limits just because the boiler does not operate the entire 24-hour period. Hard coding the definition of "boiler operating day" in the permit also provides assurance to Sunflower, KDHE, EPA, and the public that the compliance procedures for the PSD permit remain static, independent from Subpart Da, and minimize the impacts of having to make expensive software changes to the data acquisition and handling system.

<u>PM_{10} BACT Limit and Process for Change of Limit</u>

"Compliance and Other Performance Testing" Condition 8 describes a process that allows Sunflower to petition KDHE for a new PM_{10} limit if unable to achieve the 0.018 #/mmBtu BACT limitation after the initial compliance demonstration and subsequent evaluation period. While we don't object in principle to the general approach outlined in the permit -- as long as Sunflower makes bone fide efforts to meet the 0.018 #/mmBtu BACT limit -- we have concerns about the unilateral approach KDHE gives itself to adopt the new limit. Given the diverse opinion on PM_{10} test methods and how such test data may be used, we believe that any change in the PM_{10} limit should undergo an opportunity for public and EPA peer review. Therefore, we ask KDHE to revise Condition 8, or other as appropriate, to include an explicit requirement for public review of the departments action. We also recommend that Sunflower and KDHE coordinate development of the testing protocol with EPA Region 7 to assure that there are "no surprises" before or after the testing program commences.

<u>BACT and Modeling Analysis for Units that Commence Construction beyond the Initial 18 Month Period</u>

"General Provisions", Condition 2, requires Sunflower to submit information for reevaluation of the BACT and modeling analyses for <u>any</u> unit that does not commence construction within the initial 18 months of permit issuance. It is important that KDHE retain this requirement to assure that each unit, before constructed, has been reviewed for the latest developments in air pollution control technology and that subsequent emissions growth in the area have not exceeded the NAAQS or PSD increments. Where multiple units are involved, there can sometimes be confusion about the severability of this requirement, so it is imperative to make clear that unless all three units commence construction, as defined in the PSD rules, within the initial 18 month period those units that do not must undergo reanalysis. KDHE's proposed permit language appears to carry out this concept, but could benefit from additional clarity as described below.

Once Sunflower submits a reanalysis of BACT and modeling studies, KDHE may authorize an additional 18 months in which Sunflower may commence construction of subsequent units. As we note in our comments on revision of the PM_{10} BACT limit, any such permit extension for subsequent units should benefit from public and EPA peer review. Therefore, we recommend that KDHE add this additional clarification.

Lastly, if Sunflower does not commence construction on one or more of the units and does not provide the analysis required by the permit in a time frame prior to the close of the 18 month period, KDHE should make clear that authorization to construct any subsequent units automatically becomes void. It is essential that Sunflower submit the reanalysis in a timely fashion or they must begin a new PSD permitting review. Again, KDHE may want to provide this clarification in the permit, or associated record, so there is no confusion later on.

<u>Short Term SO_2 Limit Based on Modeling Analysis</u>

The revised AERMOD modeling analysis, submitted in September, 2006, notes that it may be appropriate to establish a short term 3-hour limit for SO_2. This limit would assure the modeling assumptions remain valid if Sunflower chooses to combust coal with sulfur content greater than 0.5%. Since the permit does not restrict fuel flexibility, we recommend that the department include the recommended limit, 4,358 #/hr, 3-hour average, as a condition of the permit.

[End of Comments]

Attachment B
SO_2 Baseline Emissions at
Region 7 NSPS Subpart D Units

SO2 Emissions Data for NSPS Subpart D (unscrubbed) Units

		1980	1985	1990	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	1980 – 2005 Average	1980-2005 (Max)	1980-2005 (min)	Maximum Swing from Average
SO2 Rate	Ames 8		1.12	0.41	0.40	0.42	0.44	0.36	0.36	0.38	0.34	0.36	0.34	0.34	0.34	0.40	1.12	0.34	0.72
	CBEC 3	0.68	0.85	0.66	0.76	0.70	0.73	0.80	0.74	0.68	0.65	0.65	0.59	0.52	0.55	0.68	0.85	0.52	0.17
	Neal 3	1.13	1.32	0.73	0.83	0.73	0.73	0.72	0.68	0.66	0.72	0.67	0.70	0.71	0.68	0.76	1.32	0.66	0.56
	Neal 4	1.13	0.73	0.72	0.71	0.77	0.76	0.77	0.73	0.65	0.71	0.68	0.74	0.63	0.67	0.74	1.13	0.63	0.39
	Lansing 4	1.16	0.70	0.67	0.69	0.61	0.58	0.77	0.74	0.66	0.63	0.55	0.61	0.65	0.65	0.69	1.16	0.55	0.47
	Louisa 101		0.79	0.75	0.76	0.77	0.75	0.72	0.70	0.64	0.59	0.58	0.58	0.65	0.60	0.67	0.79	0.58	0.12
	Ottumwa 1		0.82	0.72	0.71	0.77	0.71	0.72	0.70	0.66	0.65	0.59	0.67	0.66	0.64	0.69	0.82	0.59	0.13
	LaCygne 2	4.14	0.94	0.83	0.70	0.77	0.75	0.78	0.73	0.68	0.72	0.69	0.69	0.69	0.74	0.73	4.14	0.68	3.40
	Nearman 1		0.82	0.75	0.72	0.67	0.67	0.76	0.84	0.72	0.78	0.81	0.77	0.78	0.77	0.76	0.84	0.67	0.09
	Iatan 1	0.66	0.77	0.72	0.72	0.72	0.75	0.76	0.74	0.65	0.62	0.61	0.65	0.70	0.73	0.70	0.77	0.61	0.09
	GG 1	0.73	0.72	0.73	0.62	0.63	0.47	0.47	0.47	0.52	0.57	0.59	0.56	0.60	0.49	0.57	0.73	0.47	0.17
	GG 2		0.73	0.72	0.61	0.62	0.48	0.51	0.47	0.50	0.57	0.57	0.54	0.58	0.53	0.56	0.73	0.47	0.16
	Whelan 1		0.91	0.50	0.52	0.68	0.63	0.64	0.72	0.64	0.61	0.67	0.66	0.69	0.74	0.66	0.91	0.50	0.26
	Lon Wright	0.72	0.88	0.86	0.92	0.61	0.56	0.58	0.46	0.48	0.49	0.44	0.45	0.47	0.47	0.56	0.92	0.44	0.36
	NE City 1	0.80	0.92	0.70	0.79	0.72	0.76	0.53	0.71	0.67	0.68	0.63	0.62	0.70	0.73	0.70	0.92	0.53	0.22
	Platte 1		0.98	0.75	0.66	0.65	0.64	0.84	0.72	0.66	0.60	0.62	0.53	0.53	0.59	0.65	0.98	0.53	0.32
Weighted Average		0.87	0.83	0.73	0.71	0.71	0.67	0.68	0.67	0.64	0.64	0.62	0.63	0.64	0.63	0.68	4.14	0.34	3.40

		1980	1985	1990	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Sum
SO2 Tons	Ames 8	0	1,220	596	387	693	770	696	772	656	786	829	731	792	784	9,710
	CBEC 3	11,409	14,782	12,780	18,476	17,914	17,279	22,662	18,515	17,718	18,001	17,143	16,107	12,653	15,294	230,733
	Neal 3	13,955	8,879	10,284	14,894	10,327	11,563	14,504	12,419	11,071	13,073	10,076	12,818	11,459	14,084	169,405
	Neal 4	20,153	14,660	16,325	18,527	19,025	18,675	16,223	17,638	14,973	16,105	15,617	14,907	14,950	14,165	231,942
	Lansing 4	7,666	4,011	4,092	3,109	3,208	2,920	4,979	6,882	5,701	4,489	3,604	3,917	4,633	5,060	64,270
	Louisa 101	0	7,718	11,388	13,213	17,274	16,166	17,640	16,466	14,779	14,304	15,901	13,974	16,725	12,326	187,874
	Ottumwa 1	0	12,192	13,110	18,601	17,773	16,277	20,198	18,392	18,415	17,276	15,980	18,464	16,093	11,977	214,748
	LaCygne 2		12,979	18,868	22,284	21,266	11,303	18,915	19,013	20,983	20,309	19,355	20,606	20,694	20,974	247,549
	Nearman 1	0	6,290	5,663	6,501	5,841	6,620	7,739	6,355	7,596	8,388	7,625	8,727	8,024	7,242	92,611
	Iatan 1	11,886	16,174	15,394	19,289	18,713	17,927	19,296	17,397	13,430	16,283	14,856	18,400	19,219	19,217	237,482
	GG 1	9,326	8,176	9,354	14,545	13,492	11,643	11,167	10,698	9,604	16,694	15,681	16,613	15,453	14,001	176,446
	GG 2	0	12,135	11,677	13,417	12,534	11,237	11,917	10,806	12,988	14,603	16,471	14,476	16,582	14,170	173,014
	Whelan 1	0	1,052	656	1,558	2,072	1,700	1,894	2,251	2,164	2,008	2,007	2,152	2,352	2,563	24,429
	Lon Wright	989	1,244	1,244	969	914	1,086	928	987	841	1,088	978	1,017	1,181	1,332	14,798
	NE City 1	8,757	11,444	11,230	17,138	13,469	12,233	12,832	17,697	15,227	16,206	12,820	15,052	15,593	17,550	197,247
	Platte 1	0	1,521	1,779	1,729	2,213	2,004	2,782	2,564	2,497	2,436	2,250	2,194	2,158	2,476	28,603
Sum		84,141	134,477	144,440	184,637	176,727	159,403	184,372	178,852	168,642	182,049	171,192	180,154	178,560	173,216	2,300,862

		1980	1985	1990	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Sum
Heat Input	Ames 8	0	2,174,451	2,920,755	1,928,456	3,275,676	3,539,724	3,848,677	4,257,355	3,465,327	4,559,244	4,668,367	4,325,846	4,614,100	4,647,573	48,225,551
	CBEC 3	33,415,067	34,693,600	38,779,014	48,493,286	51,489,851	47,263,735	56,398,862	49,979,382	51,996,320	55,491,695	52,962,126	54,710,494	48,280,512	55,832,515	679,786,459
	Neal 3	24,760,176	13,465,981	28,297,622	35,708,260	28,253,590	31,773,385	40,046,979	36,609,523	33,331,686	36,366,602	29,860,020	36,374,200	32,098,443	41,315,851	448,262,318
	Neal 4	35,723,677	40,433,288	45,253,308	51,906,380	49,134,775	48,865,106	41,961,014	48,430,272	45,750,910	45,264,970	46,184,489	40,179,828	47,244,408	42,093,247	628,425,672
	Lansing 4	13,178,260	11,541,000	12,211,136	8,998,610	10,484,851	10,076,882	12,897,358	18,549,631	17,341,366	14,322,847	13,051,449	12,932,001	14,266,400	15,486,117	185,337,908
	Louisa 101	0	19,428,025	30,517,044	34,927,846	44,649,934	42,876,657	48,700,212	46,994,351	46,476,768	48,801,338	54,925,058	48,112,993	51,819,846	40,937,045	559,167,117
	Ottumwa 1	0	29,825,416	36,555,218	52,070,139	46,445,832	45,603,035	56,279,697	52,697,255	55,464,741	52,855,750	54,110,578	54,763,895	48,522,589	37,574,676	622,768,821
	LaCygne 2		27,512,272	45,230,987	63,957,738	55,415,961	30,279,155	48,739,770	52,383,662	61,530,633	56,376,554	55,983,769	59,874,983	59,766,097	57,052,244	674,103,825
	Nearman 1	0	15,360,366	15,170,225	18,144,298	17,535,364	19,715,621	20,249,849	15,052,235	20,970,307	21,537,256	18,782,214	22,531,661	20,506,619	18,870,938	244,426,953
	Iatan 1	35,899,829	42,130,380	42,744,348	53,922,368	51,830,862	47,679,197	50,507,808	46,905,347	41,421,377	52,388,339	48,359,038	57,016,403	55,081,257	52,746,059	678,632,612
	GG 1	25,461,324	22,784,110	25,653,820	46,803,429	43,068,200	50,070,589	47,766,100	45,641,344	36,910,068	58,836,292	53,311,364	59,639,515	51,456,566	56,736,780	624,139,501
	GG 2	0	33,454,441	32,393,500	44,180,936	40,499,998	47,170,836	46,826,700	46,312,978	52,392,994	50,999,608	57,940,211	53,919,191	56,828,555	53,378,729	616,298,677
	Whelan 1	0	2,304,761	2,616,556	5,985,310	6,097,107	5,393,551	5,956,163	6,227,080	6,766,352	6,621,829	6,024,409	6,562,721	6,827,668	6,911,747	74,295,254
	Lon Wright	2,743,950	2,820,150	2,884,299	2,101,794	2,998,353	3,891,921	3,224,196	4,292,952	3,514,086	4,480,941	4,475,420	4,499,446	5,061,937	5,626,441	52,615,886
	NE City 1	21,840,893	24,868,328	32,252,616	43,336,246	37,192,515	32,265,486	48,373,096	49,520,464	45,168,470	47,859,791	40,902,362	48,405,745	44,426,103	48,402,870	564,814,985
	Platte 1	0	3,120,000	4,748,344	5,249,669	6,791,756	6,218,873	6,609,078	7,124,489	7,612,963	8,118,457	7,255,057	8,234,073	8,181,207	8,397,149	87,661,115
Sum		193,023,176	325,916,569	398,228,792	517,714,765	495,164,625	472,683,753	538,385,559	530,978,320	530,114,368	564,881,513	548,795,931	572,082,995	554,982,307	546,009,981	6,788,962,654

Attachment C
SO_2 Emissions at Public Power Plants in Region 7

Region 7 Public Power
SO2 Data
1997-2005

STATE	FACILITY_NAME	ORISPL_C	UNITID	OP_YEAR	OP_MONTH	SO2 Mass	SO2 Rate	Average	Max Rate	Min Rate	Max Difference from Average
IA	Ames	1122	8	1997	1	87	0.44				
IA	Ames	1122	8	1997	2	69	0.44				
IA	Ames	1122	8	1997	3	28	0.39				
IA	Ames	1122	8	1997	4	68	0.51				
IA	Ames	1122	8	1997	5	96	0.48				
IA	Ames	1122	8	1997	6	71	0.46				
IA	Ames	1122	8	1997	7	82	0.39				
IA	Ames	1122	8	1997	8	82	0.43				
IA	Ames	1122	8	1997	9	71	0.41				
IA	Ames	1122	8	1997	10	79	0.44				
IA	Ames	1122	8	1997	11	37	0.39				
IA	Ames	1122	8	1997	12		-	0.44	0.51	0.39	0.07
IA	Ames	1122	8	1998	1	7	0.36				
IA	Ames	1122	8	1998	2	45	0.33				
IA	Ames	1122	8	1998	3	75	0.35				
IA	Ames	1122	8	1998	4	39	0.34				
IA	Ames	1122	8	1998	5	45	0.36				
IA	Ames	1122	8	1998	6	74	0.37				
IA	Ames	1122	8	1998	7	83	0.37				
IA	Ames	1122	8	1998	8	77	0.36				
IA	Ames	1122	8	1998	9	53	0.40				
IA	Ames	1122	8	1998	10	66	0.36				
IA	Ames	1122	8	1998	11	61	0.36				
IA	Ames	1122	8	1998	12	71	0.35	0.36	0.40	0.33	0.04
IA	Ames	1122	8	1999	1	58	0.36				
IA	Ames	1122	8	1999	2	64	0.36				
IA	Ames	1122	8	1999	3	53	0.35				
IA	Ames	1122	8	1999	4	81	0.37				
IA	Ames	1122	8	1999	5	18	0.35				
IA	Ames	1122	8	1999	6	77	0.35				
IA	Ames	1122	8	1999	7	86	0.36				
IA	Ames	1122	8	1999	8	83	0.37				
IA	Ames	1122	8	1999	9	69	0.35				
IA	Ames	1122	8	1999	10	51	0.36				
IA	Ames	1122	8	1999	11	47	0.38				
IA	Ames	1122	8	1999	12	86	0.38	0.36	0.38	0.35	0.02
IA	Ames	1122	8	2000	1	99	0.42				
IA	Ames	1122	8	2000	2	88	0.39				
IA	Ames	1122	8	2000	3	93	0.36				
IA	Ames	1122	8	2000	4	20	0.38				
IA	Ames	1122	8	2000	5		-				
IA	Ames	1122	8	2000	6	46	0.38				
IA	Ames	1122	8	2000	7	81	0.41				
IA	Ames	1122	8	2000	8	79	0.37				
IA	Ames	1122	8	2000	9	76	0.37				
IA	Ames	1122	8	2000	10	68	0.34				
IA	Ames	1122	8	2000	11		-				
IA	Ames	1122	8	2000	12	7	0.32	0.38	0.42	0.32	0.06
IA	Ames	1122	8	2001	1	76	0.36				
IA	Ames	1122	8	2001	2	76	0.33				
IA	Ames	1122	8	2001	3	93	0.36				
IA	Ames	1122	8	2001	4	77	0.35				
IA	Ames	1122	8	2001	5	78	0.33				
IA	Ames	1122	8	2001	6	47	0.32				
IA	Ames	1122	8	2001	7	66	0.35				
IA	Ames	1122	8	2001	8	66	0.34				
IA	Ames	1122	8	2001	9	68	0.33				
IA	Ames	1122	8	2001	10	72	0.36				
IA	Ames	1122	8	2001	11	43	0.34				
IA	Ames	1122	8	2001	12	26	0.33	0.34	0.36	0.32	0.02
IA	Ames	1122	8	2002	1	72	0.34				
IA	Ames	1122	8	2002	2	63	0.35				
IA	Ames	1122	8	2002	3	64	0.37				
IA	Ames	1122	8	2002	4	75	0.37				
IA	Ames	1122	8	2002	5	61	0.38				
IA	Ames	1122	8	2002	6	76	0.37				
IA	Ames	1122	8	2002	7	74	0.38				
IA	Ames	1122	8	2002	8	74	0.36				
IA	Ames	1122	8	2002	9	71	0.35				
IA	Ames	1122	8	2002	10	65	0.34				
IA	Ames	1122	8	2002	11	62	0.34				
IA	Ames	1122	8	2002	12	71	0.34	0.36	0.38	0.34	0.02
IA	Ames	1122	8	2003	1	78	0.34				
IA	Ames	1122	8	2003	2	76	0.34				
IA	Ames	1122	8	2003	3	51	0.34				
IA	Ames	1122	8	2003	4	2	0.32				
IA	Ames	1122	8	2003	5	66	0.35				
IA	Ames	1122	8	2003	6	65	0.36				
IA	Ames	1122	8	2003	7	68	0.36				
IA	Ames	1122	8	2003	8	70	0.30				
IA	Ames	1122	8	2003	9	70	0.31				

Region 7 Public Power
SO2 Data
1997-2005

STATE	FACILITY_NAME	ORISPL_C	UNITID	OP_YEAR	OP_MONTH	SO2 Mass	SO2 Rate	Average	Max Rate	Min Rate	Max Difference from Average
IA	Ames	1122	8	2003	10	64	0.33				
IA	Ames	1122	8	2003	11	39	0.36				
IA	Ames	1122	8	2003	12	82	0.36	0.34	0.36	0.30	0.04
IA	Ames	1122	8	2004	1	76	0.30				
IA	Ames	1122	8	2004	2	61	0.34				
IA	Ames	1122	8	2004	3	97	0.37				
IA	Ames	1122	8	2004	4	5	0.33				
IA	Ames	1122	8	2004	5	65	0.34				
IA	Ames	1122	8	2004	6	70	0.34				
IA	Ames	1122	8	2004	7	83	0.37				
IA	Ames	1122	8	2004	8	72	0.32				
IA	Ames	1122	8	2004	9	77	0.38				
IA	Ames	1122	8	2004	10	62	0.39				
IA	Ames	1122	8	2004	11	49	0.30				
IA	Ames	1122	8	2004	12	74	0.33	0.34	0.39	0.30	0.05
IA	Ames	1122	8	2005	1	82	0.33				
IA	Ames	1122	8	2005	2	67	0.34				
IA	Ames	1122	8	2005	3	81	0.33				
IA	Ames	1122	8	2005	4	2	0.32				
IA	Ames	1122	8	2005	5	60	0.38				
IA	Ames	1122	8	2005	6	82	0.36				
IA	Ames	1122	8	2005	7	83	0.35				
IA	Ames	1122	8	2005	8	78	0.31				
IA	Ames	1122	8	2005	9	75	0.33				
IA	Ames	1122	8	2005	10	65	0.32				
IA	Ames	1122	8	2005	11	38	0.33				
IA	Ames	1122	8	2005	12	72	0.34	0.34	0.38	0.31	0.04
KS	Nearman Creek	6064	N1	1997	1	517	0.65				
KS	Nearman Creek	6064	N1	1997	2	464	0.64				
KS	Nearman Creek	6064	N1	1997	3	426	0.63				
KS	Nearman Creek	6064	N1	1997	4	605	0.68				
KS	Nearman Creek	6064	N1	1997	5	311	0.74				
KS	Nearman Creek	6064	N1	1997	6	589	0.67				
KS	Nearman Creek	6064	N1	1997	7	587	0.63				
KS	Nearman Creek	6064	N1	1997	8	527	0.52				
KS	Nearman Creek	6064	N1	1997	9	683	0.74				
KS	Nearman Creek	6064	N1	1997	10	664	0.76				
KS	Nearman Creek	6064	N1	1997	11	611	0.75				
KS	Nearman Creek	6064	N1	1997	12	636	0.70	0.67	0.76	0.52	0.15
KS	Nearman Creek	6064	N1	1998	1	582	0.70				
KS	Nearman Creek	6064	N1	1998	2	639	0.75				
KS	Nearman Creek	6064	N1	1998	3	662	0.71				
KS	Nearman Creek	6064	N1	1998	4	783	0.81				
KS	Nearman Creek	6064	N1	1998	5	313	0.81				
KS	Nearman Creek	6064	N1	1998	6	714	0.77				
KS	Nearman Creek	6064	N1	1998	7	761	0.76				
KS	Nearman Creek	6064	N1	1998	8	480	0.72				
KS	Nearman Creek	6064	N1	1998	9	733	0.79				
KS	Nearman Creek	6064	N1	1998	10	659	0.82				
KS	Nearman Creek	6064	N1	1998	11	723	0.77				
KS	Nearman Creek	6064	N1	1998	12	689	0.75	0.76	0.82	0.70	0.06
KS	Nearman Creek	6064	N1	1999	1	743	0.82				
KS	Nearman Creek	6064	N1	1999	2	668	0.84				
KS	Nearman Creek	6064	N1	1999	3	633	0.84				
KS	Nearman Creek	6064	N1	1999	4		-				
KS	Nearman Creek	6064	N1	1999	5	387	1.25				
KS	Nearman Creek	6064	N1	1999	6	648	0.88				
KS	Nearman Creek	6064	N1	1999	7	500	0.89				
KS	Nearman Creek	6064	N1	1999	8	407	0.96				
KS	Nearman Creek	6064	N1	1999	9	335	0.80				
KS	Nearman Creek	6064	N1	1999	10	680	0.78				
KS	Nearman Creek	6064	N1	1999	11	662	0.78				
KS	Nearman Creek	6064	N1	1999	12	691	0.77	0.84	1.25	0.77	0.41
KS	Nearman Creek	6064	N1	2000	1	545	0.73				
KS	Nearman Creek	6064	N1	2000	2	393	0.66				
KS	Nearman Creek	6064	N1	2000	3	597	0.72				
KS	Nearman Creek	6064	N1	2000	4	664	0.66				
KS	Nearman Creek	6064	N1	2000	5	351	0.68				
KS	Nearman Creek	6064	N1	2000	6	681	0.70				
KS	Nearman Creek	6064	N1	2000	7	763	0.72				
KS	Nearman Creek	6064	N1	2000	8	806	0.74				
KS	Nearman Creek	6064	N1	2000	9	754	0.76				
KS	Nearman Creek	6064	N1	2000	10	791	0.78				
KS	Nearman Creek	6064	N1	2000	11	739	0.78				
KS	Nearman Creek	6064	N1	2000	12	511	0.70	0.72	0.78	0.66	0.06
KS	Nearman Creek	6064	N1	2001	1	802	0.75				
KS	Nearman Creek	6064	N1	2001	2	654	0.78				
KS	Nearman Creek	6064	N1	2001	3	804	0.74				
KS	Nearman Creek	6064	N1	2001	4	740	0.76				
KS	Nearman Creek	6064	N1	2001	5	415	0.73				
KS	Nearman Creek	6064	N1	2001	6	689	0.74				

Region 7 Public Power
SO2 Data
1997-2005

STATE	FACILITY_NAME	ORISPL_C	UNITID	OP_YEAR	OP_MONTH	SO2 Mass	SO2 Rate	Average	Max Rate	Min Rate	Max Difference from Average
KS	Nearman Creek	6064	N1	2001	7	721	0.78				
KS	Nearman Creek	6064	N1	2001	8	708	0.79				
KS	Nearman Creek	6064	N1	2001	9	764	0.82				
KS	Nearman Creek	6064	N1	2001	10	592	0.80				
KS	Nearman Creek	6064	N1	2001	11	715	0.82				
KS	Nearman Creek	6064	N1	2001	12	783	0.84	0.78	0.84	0.73	0.06
KS	Nearman Creek	6064	N1	2002	1	762	0.79				
KS	Nearman Creek	6064	N1	2002	2	671	0.87				
KS	Nearman Creek	6064	N1	2002	3	704	0.80				
KS	Nearman Creek	6064	N1	2002	4	229	0.77				
KS	Nearman Creek	6064	N1	2002	5	735	0.82				
KS	Nearman Creek	6064	N1	2002	6	708	0.82				
KS	Nearman Creek	6064	N1	2002	7	742	0.81				
KS	Nearman Creek	6064	N1	2002	8	741	0.82				
KS	Nearman Creek	6064	N1	2002	9	702	0.80				
KS	Nearman Creek	6064	N1	2002	10	722	0.81				
KS	Nearman Creek	6064	N1	2002	11	179	0.78				
KS	Nearman Creek	6064	N1	2002	12	729	0.82	0.81	0.87	0.77	0.05
KS	Nearman Creek	6064	N1	2003	1	705	0.76				
KS	Nearman Creek	6064	N1	2003	2	761	0.85				
KS	Nearman Creek	6064	N1	2003	3	556	0.85				
KS	Nearman Creek	6064	N1	2003	4	567	0.71				
KS	Nearman Creek	6064	N1	2003	5	837	0.81				
KS	Nearman Creek	6064	N1	2003	6	686	0.82				
KS	Nearman Creek	6064	N1	2003	7	832	0.77				
KS	Nearman Creek	6064	N1	2003	8	838	0.76				
KS	Nearman Creek	6064	N1	2003	9	800	0.76				
KS	Nearman Creek	6064	N1	2003	10	576	0.76				
KS	Nearman Creek	6064	N1	2003	11	716	0.72				
KS	Nearman Creek	6064	N1	2003	12	854	0.76	0.77	0.85	0.71	0.07
KS	Nearman Creek	6064	N1	2004	1	794	0.81				
KS	Nearman Creek	6064	N1	2004	2	786	0.83				
KS	Nearman Creek	6064	N1	2004	3	818	0.84				
KS	Nearman Creek	6064	N1	2004	4	273	0.76				
KS	Nearman Creek	6064	N1	2004	5	760	0.79				
KS	Nearman Creek	6064	N1	2004	6	665	0.74				
KS	Nearman Creek	6064	N1	2004	7	572	0.76				
KS	Nearman Creek	6064	N1	2004	8	577	0.81				
KS	Nearman Creek	6064	N1	2004	9	658	0.81				
KS	Nearman Creek	6064	N1	2004	10	777	0.77				
KS	Nearman Creek	6064	N1	2004	11	658	0.74				
KS	Nearman Creek	6064	N1	2004	12	686	0.72	0.78	0.84	0.72	0.07
KS	Nearman Creek	6064	N1	2005	1	743	0.75				
KS	Nearman Creek	6064	N1	2005	2	435	0.79				
KS	Nearman Creek	6064	N1	2005	3	563	0.75				
KS	Nearman Creek	6064	N1	2005	4	342	0.82				
KS	Nearman Creek	6064	N1	2005	5	560	0.82				
KS	Nearman Creek	6064	N1	2005	6	841	0.81				
KS	Nearman Creek	6064	N1	2005	7	760	0.75				
KS	Nearman Creek	6064	N1	2005	8	680	0.74				
KS	Nearman Creek	6064	N1	2005	9	688	0.80				
KS	Nearman Creek	6064	N1	2005	10	480	0.75				
KS	Nearman Creek	6064	N1	2005	11	498	0.72				
KS	Nearman Creek	6064	N1	2005	12	653	0.74	0.77	0.82	0.72	0.05
NE	Gerald Gentleman Station	6077	1	1997	1	1186	0.50				
NE	Gerald Gentleman Station	6077	1	1997	2	1041	0.45				
NE	Gerald Gentleman Station	6077	1	1997	3	849	0.42				
NE	Gerald Gentleman Station	6077	1	1997	4	1122	0.45				
NE	Gerald Gentleman Station	6077	1	1997	5	922	0.45				
NE	Gerald Gentleman Station	6077	1	1997	6	1022	0.48				
NE	Gerald Gentleman Station	6077	1	1997	7	989	0.47				
NE	Gerald Gentleman Station	6077	1	1997	8	886	0.48				
NE	Gerald Gentleman Station	6077	1	1997	9	979	0.50				
NE	Gerald Gentleman Station	6077	1	1997	10	856	0.47				
NE	Gerald Gentleman Station	6077	1	1997	11	957	0.47				
NE	Gerald Gentleman Station	6077	1	1997	12	836	0.46	0.47	0.50	0.42	0.05
NE	Gerald Gentleman Station	6077	1	1998	1	803	0.45				
NE	Gerald Gentleman Station	6077	1	1998	2	974	0.49				
NE	Gerald Gentleman Station	6077	1	1998	3	646	0.45				
NE	Gerald Gentleman Station	6077	1	1998	4	870	0.50				
NE	Gerald Gentleman Station	6077	1	1998	5	861	0.43				
NE	Gerald Gentleman Station	6077	1	1998	6	998	0.46				
NE	Gerald Gentleman Station	6077	1	1998	7	887	0.44				
NE	Gerald Gentleman Station	6077	1	1998	8	1140	0.51				
NE	Gerald Gentleman Station	6077	1	1998	9	885	0.46				
NE	Gerald Gentleman Station	6077	1	1998	10	1168	0.50				
NE	Gerald Gentleman Station	6077	1	1998	11	960	0.47				
NE	Gerald Gentleman Station	6077	1	1998	12	976	0.44	0.47	0.51	0.43	0.05
NE	Gerald Gentleman Station	6077	1	1999	1	934	0.47				
NE	Gerald Gentleman Station	6077	1	1999	2	872	0.43				
NE	Gerald Gentleman Station	6077	1	1999	3	135	0.36				

Region 7 Public Power
SO2 Data
1997-2005

STATE	FACILITY_NAME	ORISPL_C	UNITID	OP_YEAR	OP_MONTH	SO2 Mass	SO2 Rate	Average	Max Rate	Min Rate	Max Difference from Average
NE	Gerald Gentleman Station	6077	1	1999	4	797	0.40				
NE	Gerald Gentleman Station	6077	1	1999	5	814	0.40				
NE	Gerald Gentleman Station	6077	1	1999	6	930	0.47				
NE	Gerald Gentleman Station	6077	1	1999	7	1190	0.49				
NE	Gerald Gentleman Station	6077	1	1999	8	1088	0.48				
NE	Gerald Gentleman Station	6077	1	1999	9	800	0.44				
NE	Gerald Gentleman Station	6077	1	1999	10	1056	0.54				
NE	Gerald Gentleman Station	6077	1	1999	11	1075	0.57				
NE	Gerald Gentleman Station	6077	1	1999	12	1008	0.49	0.47	0.57	0.36	0.11
NE	Gerald Gentleman Station	6077	1	2000	1	989	0.56				
NE	Gerald Gentleman Station	6077	1	2000	2	965	0.55				
NE	Gerald Gentleman Station	6077	1	2000	3	1130	0.53				
NE	Gerald Gentleman Station	6077	1	2000	4	945	0.54				
NE	Gerald Gentleman Station	6077	1	2000	5	1060	0.52				
NE	Gerald Gentleman Station	6077	1	2000	6	917	0.54				
NE	Gerald Gentleman Station	6077	1	2000	7	852	0.42				
NE	Gerald Gentleman Station	6077	1	2000	8	1030	0.50				
NE	Gerald Gentleman Station	6077	1	2000	9	403	0.47				
NE	Gerald Gentleman Station	6077	1	2000	10		-				
NE	Gerald Gentleman Station	6077	1	2000	11	0	0.02				
NE	Gerald Gentleman Station	6077	1	2000	12	1313	0.56	0.52	0.56	0.02	0.50
NE	Gerald Gentleman Station	6077	1	2001	1	1538	0.56				
NE	Gerald Gentleman Station	6077	1	2001	2	1393	0.55				
NE	Gerald Gentleman Station	6077	1	2001	3	1543	0.56				
NE	Gerald Gentleman Station	6077	1	2001	4	1421	0.54				
NE	Gerald Gentleman Station	6077	1	2001	5	1442	0.56				
NE	Gerald Gentleman Station	6077	1	2001	6	1391	0.58				
NE	Gerald Gentleman Station	6077	1	2001	7	1423	0.54				
NE	Gerald Gentleman Station	6077	1	2001	8	1456	0.58				
NE	Gerald Gentleman Station	6077	1	2001	9	1271	0.58				
NE	Gerald Gentleman Station	6077	1	2001	10	967	0.66				
NE	Gerald Gentleman Station	6077	1	2001	11	1412	0.59				
NE	Gerald Gentleman Station	6077	1	2001	12	1438	0.56	0.57	0.66	0.54	0.09
NE	Gerald Gentleman Station	6077	1	2002	1	1526	0.60				
NE	Gerald Gentleman Station	6077	1	2002	2	1414	0.62				
NE	Gerald Gentleman Station	6077	1	2002	3	1531	0.60				
NE	Gerald Gentleman Station	6077	1	2002	4	1495	0.61				
NE	Gerald Gentleman Station	6077	1	2002	5	1398	0.60				
NE	Gerald Gentleman Station	6077	1	2002	6	1408	0.60				
NE	Gerald Gentleman Station	6077	1	2002	7	1486	0.57				
NE	Gerald Gentleman Station	6077	1	2002	8	1359	0.55				
NE	Gerald Gentleman Station	6077	1	2002	9	942	0.59				
NE	Gerald Gentleman Station	6077	1	2002	10	512	0.59				
NE	Gerald Gentleman Station	6077	1	2002	11	1344	0.58				
NE	Gerald Gentleman Station	6077	1	2002	12	1266	0.56	0.59	0.62	0.55	0.04
NE	Gerald Gentleman Station	6077	1	2003	1	1491	0.57				
NE	Gerald Gentleman Station	6077	1	2003	2	1207	0.53				
NE	Gerald Gentleman Station	6077	1	2003	3	1453	0.55				
NE	Gerald Gentleman Station	6077	1	2003	4	1368	0.54				
NE	Gerald Gentleman Station	6077	1	2003	5	1496	0.59				
NE	Gerald Gentleman Station	6077	1	2003	6	1357	0.55				
NE	Gerald Gentleman Station	6077	1	2003	7	1375	0.54				
NE	Gerald Gentleman Station	6077	1	2003	8	1330	0.57				
NE	Gerald Gentleman Station	6077	1	2003	9	1422	0.58				
NE	Gerald Gentleman Station	6077	1	2003	10	1337	0.54				
NE	Gerald Gentleman Station	6077	1	2003	11	1300	0.56				
NE	Gerald Gentleman Station	6077	1	2003	12	1477	0.58	0.56	0.59	0.53	0.03
NE	Gerald Gentleman Station	6077	1	2004	1	1495	0.60				
NE	Gerald Gentleman Station	6077	1	2004	2	1433	0.59				
NE	Gerald Gentleman Station	6077	1	2004	3	577	0.61				
NE	Gerald Gentleman Station	6077	1	2004	4	550	0.60				
NE	Gerald Gentleman Station	6077	1	2004	5	1488	0.60				
NE	Gerald Gentleman Station	6077	1	2004	6	1378	0.64				
NE	Gerald Gentleman Station	6077	1	2004	7	1534	0.64				
NE	Gerald Gentleman Station	6077	1	2004	8	1519	0.60				
NE	Gerald Gentleman Station	6077	1	2004	9	1323	0.61				
NE	Gerald Gentleman Station	6077	1	2004	10	1237	0.57				
NE	Gerald Gentleman Station	6077	1	2004	11	1414	0.57				
NE	Gerald Gentleman Station	6077	1	2004	12	1505	0.58	0.60	0.64	0.57	0.04
NE	Gerald Gentleman Station	6077	1	2005	1	1329	0.51				
NE	Gerald Gentleman Station	6077	1	2005	2	978	0.41				
NE	Gerald Gentleman Station	6077	1	2005	3	862	0.33				
NE	Gerald Gentleman Station	6077	1	2005	4	576	0.52				
NE	Gerald Gentleman Station	6077	1	2005	5	1389	0.53				
NE	Gerald Gentleman Station	6077	1	2005	6	1125	0.54				
NE	Gerald Gentleman Station	6077	1	2005	7	1353	0.53				
NE	Gerald Gentleman Station	6077	1	2005	8	1248	0.51				
NE	Gerald Gentleman Station	6077	1	2005	9	1279	0.53				
NE	Gerald Gentleman Station	6077	1	2005	10	1245	0.52				
NE	Gerald Gentleman Station	6077	1	2005	11	1297	0.52				
NE	Gerald Gentleman Station	6077	1	2005	12	1320	0.50	0.49	0.54	0.33	0.16

Region 7 Public Power
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STATE	FACILITY_NAME	ORISPL_C	UNITID	OP_YEAR	OP_MONTH	SO2 Mass	SO2 Rate	Average	Max Rate	Min Rate	Max Difference from Average
NE	Gerald Gentleman Station	6077	2	1997	1	1044	0.46				
NE	Gerald Gentleman Station	6077	2	1997	2	761	0.46				
NE	Gerald Gentleman Station	6077	2	1997	3	930	0.42				
NE	Gerald Gentleman Station	6077	2	1997	4	974	0.44				
NE	Gerald Gentleman Station	6077	2	1997	5	752	0.47				
NE	Gerald Gentleman Station	6077	2	1997	6	741	0.46				
NE	Gerald Gentleman Station	6077	2	1997	7	1056	0.46				
NE	Gerald Gentleman Station	6077	2	1997	8	909	0.46				
NE	Gerald Gentleman Station	6077	2	1997	9	819	0.51				
NE	Gerald Gentleman Station	6077	2	1997	10	995	0.56				
NE	Gerald Gentleman Station	6077	2	1997	11	1121	0.54				
NE	Gerald Gentleman Station	6077	2	1997	12	1137	0.50	0.48	0.56	0.42	0.08
NE	Gerald Gentleman Station	6077	2	1998	1	928	0.46				
NE	Gerald Gentleman Station	6077	2	1998	2	959	0.49				
NE	Gerald Gentleman Station	6077	2	1998	3	946	0.51				
NE	Gerald Gentleman Station	6077	2	1998	4	935	0.53				
NE	Gerald Gentleman Station	6077	2	1998	5	1096	0.51				
NE	Gerald Gentleman Station	6077	2	1998	6	940	0.52				
NE	Gerald Gentleman Station	6077	2	1998	7	1090	0.51				
NE	Gerald Gentleman Station	6077	2	1998	8	1064	0.56				
NE	Gerald Gentleman Station	6077	2	1998	9	590	0.50				
NE	Gerald Gentleman Station	6077	2	1998	10	1069	0.50				
NE	Gerald Gentleman Station	6077	2	1998	11	1129	0.53				
NE	Gerald Gentleman Station	6077	2	1998	12	1171	0.49	0.51	0.56	0.46	0.05
NE	Gerald Gentleman Station	6077	2	1999	1	1070	0.48				
NE	Gerald Gentleman Station	6077	2	1999	2	890	0.43				
NE	Gerald Gentleman Station	6077	2	1999	3	1197	0.50				
NE	Gerald Gentleman Station	6077	2	1999	4	65	0.45				
NE	Gerald Gentleman Station	6077	2	1999	5	363	0.41				
NE	Gerald Gentleman Station	6077	2	1999	6	985	0.51				
NE	Gerald Gentleman Station	6077	2	1999	7	1235	0.49				
NE	Gerald Gentleman Station	6077	2	1999	8	1082	0.46				
NE	Gerald Gentleman Station	6077	2	1999	9	797	0.44				
NE	Gerald Gentleman Station	6077	2	1999	10	1019	0.45				
NE	Gerald Gentleman Station	6077	2	1999	11	1017	0.46				
NE	Gerald Gentleman Station	6077	2	1999	12	1085	0.46	0.47	0.51	0.41	0.05
NE	Gerald Gentleman Station	6077	2	2000	1	1231	0.52				
NE	Gerald Gentleman Station	6077	2	2000	2	903	0.48				
NE	Gerald Gentleman Station	6077	2	2000	3	1367	0.57				
NE	Gerald Gentleman Station	6077	2	2000	4	1308	0.57				
NE	Gerald Gentleman Station	6077	2	2000	5	1241	0.52				
NE	Gerald Gentleman Station	6077	2	2000	6	852	0.49				
NE	Gerald Gentleman Station	6077	2	2000	7	1203	0.49				
NE	Gerald Gentleman Station	6077	2	2000	8	1220	0.50				
NE	Gerald Gentleman Station	6077	2	2000	9	945	0.50				
NE	Gerald Gentleman Station	6077	2	2000	10	1198	0.52				
NE	Gerald Gentleman Station	6077	2	2000	11	899	0.40				
NE	Gerald Gentleman Station	6077	2	2000	12	621	0.34	0.50	0.57	0.34	0.16
NE	Gerald Gentleman Station	6077	2	2001	1	1343	0.55				
NE	Gerald Gentleman Station	6077	2	2001	2	1075	0.57				
NE	Gerald Gentleman Station	6077	2	2001	3	1392	0.60				
NE	Gerald Gentleman Station	6077	2	2001	4		-				
NE	Gerald Gentleman Station	6077	2	2001	5	856	0.56				
NE	Gerald Gentleman Station	6077	2	2001	6	1281	0.57				
NE	Gerald Gentleman Station	6077	2	2001	7	1349	0.52				
NE	Gerald Gentleman Station	6077	2	2001	8	1465	0.56				
NE	Gerald Gentleman Station	6077	2	2001	9	1371	0.58				
NE	Gerald Gentleman Station	6077	2	2001	10	1532	0.61				
NE	Gerald Gentleman Station	6077	2	2001	11	1431	0.59				
NE	Gerald Gentleman Station	6077	2	2001	12	1507	0.58	0.57	0.61	0.52	0.06
NE	Gerald Gentleman Station	6077	2	2002	1	1549	0.60				
NE	Gerald Gentleman Station	6077	2	2002	2	1399	0.61				
NE	Gerald Gentleman Station	6077	2	2002	3	1532	0.59				
NE	Gerald Gentleman Station	6077	2	2002	4	1449	0.59				
NE	Gerald Gentleman Station	6077	2	2002	5	681	0.59				
NE	Gerald Gentleman Station	6077	2	2002	6	1383	0.59				
NE	Gerald Gentleman Station	6077	2	2002	7	1497	0.56				
NE	Gerald Gentleman Station	6077	2	2002	8	1374	0.55				
NE	Gerald Gentleman Station	6077	2	2002	9	1348	0.54				
NE	Gerald Gentleman Station	6077	2	2002	10	1372	0.53				
NE	Gerald Gentleman Station	6077	2	2002	11	1435	0.55				
NE	Gerald Gentleman Station	6077	2	2002	12	1453	0.54	0.57	0.61	0.53	0.04
NE	Gerald Gentleman Station	6077	2	2003	1	1368	0.53				
NE	Gerald Gentleman Station	6077	2	2003	2	1146	0.49				
NE	Gerald Gentleman Station	6077	2	2003	3	1210	0.50				
NE	Gerald Gentleman Station	6077	2	2003	4	769	0.51				
NE	Gerald Gentleman Station	6077	2	2003	5	111	0.43				
NE	Gerald Gentleman Station	6077	2	2003	6	1297	0.54				
NE	Gerald Gentleman Station	6077	2	2003	7	1379	0.54				
NE	Gerald Gentleman Station	6077	2	2003	8	1458	0.56				
NE	Gerald Gentleman Station	6077	2	2003	9	1427	0.58				

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SO2 Data
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STATE	FACILITY_NAME	ORISPL_C	UNITID	OP_YEAR	OP_MONTH	SO2 Mass	SO2 Rate	Average	Max Rate	Min Rate	Max Difference from Average
NE	Gerald Gentleman Station	6077	2	2003	10	1395	0.53				
NE	Gerald Gentleman Station	6077	2	2003	11	1462	0.57				
NE	Gerald Gentleman Station	6077	2	2003	12	1453	0.55	0.54	0.58	0.43	0.10
NE	Gerald Gentleman Station	6077	2	2004	1	1561	0.59				
NE	Gerald Gentleman Station	6077	2	2004	2	1244	0.56				
NE	Gerald Gentleman Station	6077	2	2004	3	1492	0.59				
NE	Gerald Gentleman Station	6077	2	2004	4	1550	0.62				
NE	Gerald Gentleman Station	6077	2	2004	5	885	0.56				
NE	Gerald Gentleman Station	6077	2	2004	6	1040	0.59				
NE	Gerald Gentleman Station	6077	2	2004	7	1239	0.61				
NE	Gerald Gentleman Station	6077	2	2004	8	1538	0.58				
NE	Gerald Gentleman Station	6077	2	2004	9	1406	0.57				
NE	Gerald Gentleman Station	6077	2	2004	10	1540	0.57				
NE	Gerald Gentleman Station	6077	2	2004	11	1490	0.57				
NE	Gerald Gentleman Station	6077	2	2004	12	1597	0.59	0.58	0.62	0.56	0.03
NE	Gerald Gentleman Station	6077	2	2005	1	1450	0.57				
NE	Gerald Gentleman Station	6077	2	2005	2	1316	0.53				
NE	Gerald Gentleman Station	6077	2	2005	3	1437	0.54				
NE	Gerald Gentleman Station	6077	2	2005	4	1262	0.52				
NE	Gerald Gentleman Station	6077	2	2005	5		-				
NE	Gerald Gentleman Station	6077	2	2005	6	740	0.51				
NE	Gerald Gentleman Station	6077	2	2005	7	1421	0.53				
NE	Gerald Gentleman Station	6077	2	2005	8	1305	0.53				
NE	Gerald Gentleman Station	6077	2	2005	9	1289	0.54				
NE	Gerald Gentleman Station	6077	2	2005	10	1357	0.54				
NE	Gerald Gentleman Station	6077	2	2005	11	1262	0.53				
NE	Gerald Gentleman Station	6077	2	2005	12	1332	0.49	0.53	0.57	0.49	0.04
NE	Gerald Whelan Energy Center	60	1	1997	1	168	0.56				
NE	Gerald Whelan Energy Center	60	1	1997	2	143	0.54				
NE	Gerald Whelan Energy Center	60	1	1997	3	65	0.56				
NE	Gerald Whelan Energy Center	60	1	1997	4	0	1.95				
NE	Gerald Whelan Energy Center	60	1	1997	5	101	0.50				
NE	Gerald Whelan Energy Center	60	1	1997	6	159	0.65				
NE	Gerald Whelan Energy Center	60	1	1997	7	198	0.64				
NE	Gerald Whelan Energy Center	60	1	1997	8	194	0.68				
NE	Gerald Whelan Energy Center	60	1	1997	9	160	0.59				
NE	Gerald Whelan Energy Center	60	1	1997	10	159	0.66				
NE	Gerald Whelan Energy Center	60	1	1997	11	172	0.75				
NE	Gerald Whelan Energy Center	60	1	1997	12	181	0.76	0.63	1.95	0.50	1.32
NE	Gerald Whelan Energy Center	60	1	1998	1	159	0.69				
NE	Gerald Whelan Energy Center	60	1	1998	2	81	0.38				
NE	Gerald Whelan Energy Center	60	1	1998	3	97	0.42				
NE	Gerald Whelan Energy Center	60	1	1998	4	42	0.43				
NE	Gerald Whelan Energy Center	60	1	1998	5	144	0.53				
NE	Gerald Whelan Energy Center	60	1	1998	6	203	0.71				
NE	Gerald Whelan Energy Center	60	1	1998	7	211	0.67				
NE	Gerald Whelan Energy Center	60	1	1998	8	217	0.71				
NE	Gerald Whelan Energy Center	60	1	1998	9	222	0.76				
NE	Gerald Whelan Energy Center	60	1	1998	10	161	0.68				
NE	Gerald Whelan Energy Center	60	1	1998	11	179	0.74				
NE	Gerald Whelan Energy Center	60	1	1998	12	178	0.70	0.64	0.76	0.38	0.25
NE	Gerald Whelan Energy Center	60	1	1999	1	198	0.73				
NE	Gerald Whelan Energy Center	60	1	1999	2	179	0.71				
NE	Gerald Whelan Energy Center	60	1	1999	3	156	0.74				
NE	Gerald Whelan Energy Center	60	1	1999	4	41	0.73				
NE	Gerald Whelan Energy Center	60	1	1999	5	207	0.74				
NE	Gerald Whelan Energy Center	60	1	1999	6	228	0.73				
NE	Gerald Whelan Energy Center	60	1	1999	7	254	0.74				
NE	Gerald Whelan Energy Center	60	1	1999	8	231	0.72				
NE	Gerald Whelan Energy Center	60	1	1999	9	194	0.72				
NE	Gerald Whelan Energy Center	60	1	1999	10	154	0.70				
NE	Gerald Whelan Energy Center	60	1	1999	11	197	0.71				
NE	Gerald Whelan Energy Center	60	1	1999	12	212	0.71	0.72	0.74	0.70	0.02
NE	Gerald Whelan Energy Center	60	1	2000	1	207	0.69				
NE	Gerald Whelan Energy Center	60	1	2000	2	201	0.70				
NE	Gerald Whelan Energy Center	60	1	2000	3	213	0.68				
NE	Gerald Whelan Energy Center	60	1	2000	4	56	0.69				
NE	Gerald Whelan Energy Center	60	1	2000	5	195	0.64				
NE	Gerald Whelan Energy Center	60	1	2000	6	192	0.64				
NE	Gerald Whelan Energy Center	60	1	2000	7	208	0.64				
NE	Gerald Whelan Energy Center	60	1	2000	8	179	0.55				
NE	Gerald Whelan Energy Center	60	1	2000	9	167	0.58				
NE	Gerald Whelan Energy Center	60	1	2000	10	155	0.63				
NE	Gerald Whelan Energy Center	60	1	2000	11	182	0.62				
NE	Gerald Whelan Energy Center	60	1	2000	12	210	0.67	0.64	0.70	0.55	0.09
NE	Gerald Whelan Energy Center	60	1	2001	1	190	0.62				
NE	Gerald Whelan Energy Center	60	1	2001	2	176	0.64				
NE	Gerald Whelan Energy Center	60	1	2001	3	187	0.64				
NE	Gerald Whelan Energy Center	60	1	2001	4	110	0.55				
NE	Gerald Whelan Energy Center	60	1	2001	5	149	0.61				
NE	Gerald Whelan Energy Center	60	1	2001	6	148	0.59				

Region 7 Public Power
SO2 Data
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STATE	FACILITY_NAME	ORISPL_C	UNITID	OP_YEAR	OP_MONTH	SO2 Mass	SO2 Rate	Average	Max Rate	Min Rate	Max Difference from Average
NE	Gerald Whelan Energy Center	60	1	2001	7	179	0.54				
NE	Gerald Whelan Energy Center	60	1	2001	8	222	0.70				
NE	Gerald Whelan Energy Center	60	1	2001	9	156	0.55				
NE	Gerald Whelan Energy Center	60	1	2001	10	153	0.63				
NE	Gerald Whelan Energy Center	60	1	2001	11	175	0.62				
NE	Gerald Whelan Energy Center	60	1	2001	12	162	0.57	0.61	0.70	0.54	0.10
NE	Gerald Whelan Energy Center	60	1	2002	1	159	0.56				
NE	Gerald Whelan Energy Center	60	1	2002	2	145	0.55				
NE	Gerald Whelan Energy Center	60	1	2002	3	76	0.52				
NE	Gerald Whelan Energy Center	60	1	2002	4	27	0.61				
NE	Gerald Whelan Energy Center	60	1	2002	5	203	0.71				
NE	Gerald Whelan Energy Center	60	1	2002	6	213	0.69				
NE	Gerald Whelan Energy Center	60	1	2002	7	241	0.75				
NE	Gerald Whelan Energy Center	60	1	2002	8	201	0.67				
NE	Gerald Whelan Energy Center	60	1	2002	9	131	0.72				
NE	Gerald Whelan Energy Center	60	1	2002	10	182	0.63				
NE	Gerald Whelan Energy Center	60	1	2002	11	201	0.69				
NE	Gerald Whelan Energy Center	60	1	2002	12	227	0.77	0.67	0.77	0.52	0.14
NE	Gerald Whelan Energy Center	60	1	2003	1	187	0.61				
NE	Gerald Whelan Energy Center	60	1	2003	2	149	0.54				
NE	Gerald Whelan Energy Center	60	1	2003	3	151	0.52				
NE	Gerald Whelan Energy Center	60	1	2003	4	46	0.48				
NE	Gerald Whelan Energy Center	60	1	2003	5	164	0.59				
NE	Gerald Whelan Energy Center	60	1	2003	6	195	0.69				
NE	Gerald Whelan Energy Center	60	1	2003	7	264	0.82				
NE	Gerald Whelan Energy Center	60	1	2003	8	240	0.77				
NE	Gerald Whelan Energy Center	60	1	2003	9	190	0.70				
NE	Gerald Whelan Energy Center	60	1	2003	10	152	0.58				
NE	Gerald Whelan Energy Center	60	1	2003	11	179	0.61				
NE	Gerald Whelan Energy Center	60	1	2003	12	237	0.81	0.66	0.82	0.48	0.18
NE	Gerald Whelan Energy Center	60	1	2004	1	218	0.74				
NE	Gerald Whelan Energy Center	60	1	2004	2	220	0.79				
NE	Gerald Whelan Energy Center	60	1	2004	3	167	0.56				
NE	Gerald Whelan Energy Center	60	1	2004	4	78	0.49				
NE	Gerald Whelan Energy Center	60	1	2004	5	200	0.66				
NE	Gerald Whelan Energy Center	60	1	2004	6	202	0.69				
NE	Gerald Whelan Energy Center	60	1	2004	7	225	0.72				
NE	Gerald Whelan Energy Center	60	1	2004	8	220	0.70				
NE	Gerald Whelan Energy Center	60	1	2004	9	205	0.71				
NE	Gerald Whelan Energy Center	60	1	2004	10	173	0.69				
NE	Gerald Whelan Energy Center	60	1	2004	11	222	0.72				
NE	Gerald Whelan Energy Center	60	1	2004	12	221	0.71	0.69	0.79	0.49	0.20
NE	Gerald Whelan Energy Center	60	1	2005	1	184	0.59				
NE	Gerald Whelan Energy Center	60	1	2005	2	232	0.84				
NE	Gerald Whelan Energy Center	60	1	2005	3	188	0.73				
NE	Gerald Whelan Energy Center	60	1	2005	4	213	0.72				
NE	Gerald Whelan Energy Center	60	1	2005	5	204	0.68				
NE	Gerald Whelan Energy Center	60	1	2005	6	232	0.76				
NE	Gerald Whelan Energy Center	60	1	2005	7	234	0.73				
NE	Gerald Whelan Energy Center	60	1	2005	8	230	0.71				
NE	Gerald Whelan Energy Center	60	1	2005	9	249	0.82				
NE	Gerald Whelan Energy Center	60	1	2005	10	99	0.74				
NE	Gerald Whelan Energy Center	60	1	2005	11	250	0.83				
NE	Gerald Whelan Energy Center	60	1	2005	12	249	0.76	0.74	0.84	0.59	0.15
NE	Lon D Wright Power Plant	2240	8	1997	1	95	0.56				
NE	Lon D Wright Power Plant	2240	8	1997	2	101	0.61				
NE	Lon D Wright Power Plant	2240	8	1997	3	18	0.61				
NE	Lon D Wright Power Plant	2240	8	1997	4		-				
NE	Lon D Wright Power Plant	2240	8	1997	5	7	0.53				
NE	Lon D Wright Power Plant	2240	8	1997	6	113	0.57				
NE	Lon D Wright Power Plant	2240	8	1997	7	140	0.62				
NE	Lon D Wright Power Plant	2240	8	1997	8	127	0.56				
NE	Lon D Wright Power Plant	2240	8	1997	9	131	0.52				
NE	Lon D Wright Power Plant	2240	8	1997	10	143	0.56				
NE	Lon D Wright Power Plant	2240	8	1997	11	109	0.52				
NE	Lon D Wright Power Plant	2240	8	1997	12	101	0.52	0.56	0.62	0.52	0.06
NE	Lon D Wright Power Plant	2240	8	1998	1	60	0.52				
NE	Lon D Wright Power Plant	2240	8	1998	2	89	0.52				
NE	Lon D Wright Power Plant	2240	8	1998	3	49	0.53				
NE	Lon D Wright Power Plant	2240	8	1998	4	5	0.57				
NE	Lon D Wright Power Plant	2240	8	1998	5	124	0.59				
NE	Lon D Wright Power Plant	2240	8	1998	6	112	0.57				
NE	Lon D Wright Power Plant	2240	8	1998	7	154	0.57				
NE	Lon D Wright Power Plant	2240	8	1998	8	150	0.66				
NE	Lon D Wright Power Plant	2240	8	1998	9	108	0.62				
NE	Lon D Wright Power Plant	2240	8	1998	10		-				
NE	Lon D Wright Power Plant	2240	8	1998	11		-				
NE	Lon D Wright Power Plant	2240	8	1998	12	76	0.53	0.58	0.66	0.52	0.08
NE	Lon D Wright Power Plant	2240	8	1999	1	120	0.58				
NE	Lon D Wright Power Plant	2240	8	1999	2	104	0.59				
NE	Lon D Wright Power Plant	2240	8	1999	3	86	0.59				

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STATE	FACILITY_NAME	ORISPL_C	UNITID	OP_YEAR	OP_MONTH	SO2 Mass	SO2 Rate	Average	Max Rate	Min Rate	Max Difference from Average
NE	Lon D Wright Power Plant	2240	8	1999	4	20	0.38				
NE	Lon D Wright Power Plant	2240	8	1999	5	77	0.41				
NE	Lon D Wright Power Plant	2240	8	1999	6	95	0.41				
NE	Lon D Wright Power Plant	2240	8	1999	7	114	0.40				
NE	Lon D Wright Power Plant	2240	8	1999	8	107	0.42				
NE	Lon D Wright Power Plant	2240	8	1999	9	82	0.44				
NE	Lon D Wright Power Plant	2240	8	1999	10	25	0.42				
NE	Lon D Wright Power Plant	2240	8	1999	11	75	0.43				
NE	Lon D Wright Power Plant	2240	8	1999	12	84	0.44	0.46	0.59	0.38	0.13
NE	Lon D Wright Power Plant	2240	8	2000	1	2	0.40				
NE	Lon D Wright Power Plant	2240	8	2000	2		-				
NE	Lon D Wright Power Plant	2240	8	2000	3	0	0.00				
NE	Lon D Wright Power Plant	2240	8	2000	4	47	0.43				
NE	Lon D Wright Power Plant	2240	8	2000	5	105	0.51				
NE	Lon D Wright Power Plant	2240	8	2000	6	90	0.50				
NE	Lon D Wright Power Plant	2240	8	2000	7	130	0.60				
NE	Lon D Wright Power Plant	2240	8	2000	8	97	0.39				
NE	Lon D Wright Power Plant	2240	8	2000	9	74	0.38				
NE	Lon D Wright Power Plant	2240	8	2000	10	76	0.38				
NE	Lon D Wright Power Plant	2240	8	2000	11	82	0.53				
NE	Lon D Wright Power Plant	2240	8	2000	12	138	0.58	0.48	0.60	0.00	0.48
NE	Lon D Wright Power Plant	2240	8	2001	1	103	0.52				
NE	Lon D Wright Power Plant	2240	8	2001	2	115	0.56				
NE	Lon D Wright Power Plant	2240	8	2001	3	128	0.51				
NE	Lon D Wright Power Plant	2240	8	2001	4	116	0.52				
NE	Lon D Wright Power Plant	2240	8	2001	5	4	0.29				
NE	Lon D Wright Power Plant	2240	8	2001	6	133	0.56				
NE	Lon D Wright Power Plant	2240	8	2001	7	128	0.51				
NE	Lon D Wright Power Plant	2240	8	2001	8	138	0.48				
NE	Lon D Wright Power Plant	2240	8	2001	9	87	0.44				
NE	Lon D Wright Power Plant	2240	8	2001	10		-				
NE	Lon D Wright Power Plant	2240	8	2001	11	59	0.36				
NE	Lon D Wright Power Plant	2240	8	2001	12	77	0.38	0.49	0.56	0.29	0.20
NE	Lon D Wright Power Plant	2240	8	2002	1	77	0.37				
NE	Lon D Wright Power Plant	2240	8	2002	2	30	0.40				
NE	Lon D Wright Power Plant	2240	8	2002	3	75	0.38				
NE	Lon D Wright Power Plant	2240	8	2002	4	96	0.40				
NE	Lon D Wright Power Plant	2240	8	2002	5	96	0.45				
NE	Lon D Wright Power Plant	2240	8	2002	6	122	0.48				
NE	Lon D Wright Power Plant	2240	8	2002	7	118	0.47				
NE	Lon D Wright Power Plant	2240	8	2002	8	111	0.46				
NE	Lon D Wright Power Plant	2240	8	2002	9	79	0.53				
NE	Lon D Wright Power Plant	2240	8	2002	10		-				
NE	Lon D Wright Power Plant	2240	8	2002	11	87	0.48				
NE	Lon D Wright Power Plant	2240	8	2002	12	85	0.38	0.44	0.53	0.37	0.09
NE	Lon D Wright Power Plant	2240	8	2003	1	134	0.51				
NE	Lon D Wright Power Plant	2240	8	2003	2	67	0.45				
NE	Lon D Wright Power Plant	2240	8	2003	3	98	0.48				
NE	Lon D Wright Power Plant	2240	8	2003	4	94	0.51				
NE	Lon D Wright Power Plant	2240	8	2003	5	22	0.39				
NE	Lon D Wright Power Plant	2240	8	2003	6	75	0.43				
NE	Lon D Wright Power Plant	2240	8	2003	7	123	0.42				
NE	Lon D Wright Power Plant	2240	8	2003	8	141	0.51				
NE	Lon D Wright Power Plant	2240	8	2003	9	75	0.39				
NE	Lon D Wright Power Plant	2240	8	2003	10		-				
NE	Lon D Wright Power Plant	2240	8	2003	11	76	0.40				
NE	Lon D Wright Power Plant	2240	8	2003	12	111	0.42	0.45	0.51	0.39	0.07
NE	Lon D Wright Power Plant	2240	8	2004	1	116	0.45				
NE	Lon D Wright Power Plant	2240	8	2004	2	105	0.45				
NE	Lon D Wright Power Plant	2240	8	2004	3	26	0.42				
NE	Lon D Wright Power Plant	2240	8	2004	4	108	0.50				
NE	Lon D Wright Power Plant	2240	8	2004	5	122	0.49				
NE	Lon D Wright Power Plant	2240	8	2004	6	146	0.55				
NE	Lon D Wright Power Plant	2240	8	2004	7	141	0.51				
NE	Lon D Wright Power Plant	2240	8	2004	8	136	0.51				
NE	Lon D Wright Power Plant	2240	8	2004	9	103	0.42				
NE	Lon D Wright Power Plant	2240	8	2004	10	64	0.39				
NE	Lon D Wright Power Plant	2240	8	2004	11	17	0.32				
NE	Lon D Wright Power Plant	2240	8	2004	12	98	0.39	0.47	0.55	0.32	0.14
NE	Lon D Wright Power Plant	2240	8	2005	1	121	0.39				
NE	Lon D Wright Power Plant	2240	8	2005	2	111	0.41				
NE	Lon D Wright Power Plant	2240	8	2005	3	33	0.40				
NE	Lon D Wright Power Plant	2240	8	2005	4	124	0.49				
NE	Lon D Wright Power Plant	2240	8	2005	5	143	0.50				
NE	Lon D Wright Power Plant	2240	8	2005	6	137	0.47				
NE	Lon D Wright Power Plant	2240	8	2005	7	143	0.51				
NE	Lon D Wright Power Plant	2240	8	2005	8	124	0.45				
NE	Lon D Wright Power Plant	2240	8	2005	9	127	0.50				
NE	Lon D Wright Power Plant	2240	8	2005	10	63	0.55				
NE	Lon D Wright Power Plant	2240	8	2005	11	103	0.55				
NE	Lon D Wright Power Plant	2240	8	2005	12	103	0.48	0.47	0.55	0.39	0.08

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STATE	FACILITY_NAME	ORISPL_C	UNITID	OP_YEAR	OP_MONTH	SO2 Mass	SO2 Rate	Average	Max Rate	Min Rate	Max Difference from Average
NE	Nebraska City Station	6096	1	1997	1	1442	0.73				
NE	Nebraska City Station	6096	1	1997	2	1482	0.87				
NE	Nebraska City Station	6096	1	1997	3	1575	0.92				
NE	Nebraska City Station	6096	1	1997	4	1986	0.98				
NE	Nebraska City Station	6096	1	1997	5	1445	0.81				
NE	Nebraska City Station	6096	1	1997	6	1187	0.70				
NE	Nebraska City Station	6096	1	1997	7	1207	0.66				
NE	Nebraska City Station	6096	1	1997	8	977	0.55				
NE	Nebraska City Station	6096	1	1997	9	376	0.57				
NE	Nebraska City Station	6096	1	1997	10		-				
NE	Nebraska City Station	6096	1	1997	11	14	0.44				
NE	Nebraska City Station	6096	1	1997	12	541	0.57	0.76	0.98	0.44	0.32
NE	Nebraska City Station	6096	1	1998	1	1001	0.60				
NE	Nebraska City Station	6096	1	1998	2	973	0.68				
NE	Nebraska City Station	6096	1	1998	3	1626	0.67				
NE	Nebraska City Station	6096	1	1998	4	1580	0.69				
NE	Nebraska City Station	6096	1	1998	5	1463	0.64				
NE	Nebraska City Station	6096	1	1998	6	573	0.46				
NE	Nebraska City Station	6096	1	1998	7	937	0.44				
NE	Nebraska City Station	6096	1	1998	8	996	0.46				
NE	Nebraska City Station	6096	1	1998	9	929	0.49				
NE	Nebraska City Station	6096	1	1998	10	830	0.40				
NE	Nebraska City Station	6096	1	1998	11	865	0.39				
NE	Nebraska City Station	6096	1	1998	12	1059	0.45	0.53	0.69	0.39	0.16
NE	Nebraska City Station	6096	1	1999	1	918	0.52				
NE	Nebraska City Station	6096	1	1999	2		-				
NE	Nebraska City Station	6096	1	1999	3	1490	0.70				
NE	Nebraska City Station	6096	1	1999	4	1861	0.75				
NE	Nebraska City Station	6096	1	1999	5	1914	0.75				
NE	Nebraska City Station	6096	1	1999	6	1117	0.72				
NE	Nebraska City Station	6096	1	1999	7	1832	0.72				
NE	Nebraska City Station	6096	1	1999	8	1618	0.71				
NE	Nebraska City Station	6096	1	1999	9	1509	0.69				
NE	Nebraska City Station	6096	1	1999	10	2004	0.76				
NE	Nebraska City Station	6096	1	1999	11	1817	0.75				
NE	Nebraska City Station	6096	1	1999	12	1617	0.74	0.71	0.76	0.52	0.19
NE	Nebraska City Station	6096	1	2000	1	1477	0.72				
NE	Nebraska City Station	6096	1	2000	2	1197	0.70				
NE	Nebraska City Station	6096	1	2000	3	299	0.65				
NE	Nebraska City Station	6096	1	2000	4	1371	0.67				
NE	Nebraska City Station	6096	1	2000	5	1351	0.67				
NE	Nebraska City Station	6096	1	2000	6	1232	0.69				
NE	Nebraska City Station	6096	1	2000	7	1270	0.64				
NE	Nebraska City Station	6096	1	2000	8	1357	0.63				
NE	Nebraska City Station	6096	1	2000	9	1332	0.68				
NE	Nebraska City Station	6096	1	2000	10	1527	0.69				
NE	Nebraska City Station	6096	1	2000	11	1406	0.67				
NE	Nebraska City Station	6096	1	2000	12	1409	0.65	0.67	0.72	0.63	0.05
NE	Nebraska City Station	6096	1	2001	1	1467	0.68				
NE	Nebraska City Station	6096	1	2001	2	879	0.67				
NE	Nebraska City Station	6096	1	2001	3	1501	0.67				
NE	Nebraska City Station	6096	1	2001	4	1406	0.66				
NE	Nebraska City Station	6096	1	2001	5	1058	0.70				
NE	Nebraska City Station	6096	1	2001	6	1345	0.69				
NE	Nebraska City Station	6096	1	2001	7	1315	0.68				
NE	Nebraska City Station	6096	1	2001	8	1370	0.64				
NE	Nebraska City Station	6096	1	2001	9	1412	0.67				
NE	Nebraska City Station	6096	1	2001	10	1614	0.73				
NE	Nebraska City Station	6096	1	2001	11	1443	0.70				
NE	Nebraska City Station	6096	1	2001	12	1396	0.64	0.68	0.73	0.64	0.05
NE	Nebraska City Station	6096	1	2002	1	1258	0.63				
NE	Nebraska City Station	6096	1	2002	2	1108	0.58				
NE	Nebraska City Station	6096	1	2002	3	30	0.55				
NE	Nebraska City Station	6096	1	2002	4	329	0.68				
NE	Nebraska City Station	6096	1	2002	5	1420	0.64				
NE	Nebraska City Station	6096	1	2002	6	1030	0.61				
NE	Nebraska City Station	6096	1	2002	7	1429	0.64				
NE	Nebraska City Station	6096	1	2002	8	1017	0.63				
NE	Nebraska City Station	6096	1	2002	9	1327	0.66				
NE	Nebraska City Station	6096	1	2002	10	1303	0.62				
NE	Nebraska City Station	6096	1	2002	11	1193	0.59				
NE	Nebraska City Station	6096	1	2002	12	1375	0.66	0.63	0.68	0.55	0.07
NE	Nebraska City Station	6096	1	2003	1	1263	0.62				
NE	Nebraska City Station	6096	1	2003	2	1183	0.60				
NE	Nebraska City Station	6096	1	2003	3	1217	0.62				
NE	Nebraska City Station	6096	1	2003	4	813	0.58				
NE	Nebraska City Station	6096	1	2003	5	1042	0.55				
NE	Nebraska City Station	6096	1	2003	6	1300	0.61				
NE	Nebraska City Station	6096	1	2003	7	1547	0.66				
NE	Nebraska City Station	6096	1	2003	8	1466	0.64				
NE	Nebraska City Station	6096	1	2003	9	1380	0.63				

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STATE	FACILITY_NAME	ORISPL_C	UNITID	OP_YEAR	OP_MONTH	SO2 Mass	SO2 Rate	Average	Max Rate	Min Rate	Max Difference from Average
NE	Nebraska City Station	6096	1	2003	10	1448	0.72				
NE	Nebraska City Station	6096	1	2003	11	1113	0.60				
NE	Nebraska City Station	6096	1	2003	12	1280	0.60	0.62	0.72	0.55	0.10
NE	Nebraska City Station	6096	1	2004	1	1425	0.66				
NE	Nebraska City Station	6096	1	2004	2	1374	0.72				
NE	Nebraska City Station	6096	1	2004	3	1480	0.69				
NE	Nebraska City Station	6096	1	2004	4	1348	0.67				
NE	Nebraska City Station	6096	1	2004	5		-				
NE	Nebraska City Station	6096	1	2004	6	735	0.66				
NE	Nebraska City Station	6096	1	2004	7	1350	0.65				
NE	Nebraska City Station	6096	1	2004	8	1500	0.73				
NE	Nebraska City Station	6096	1	2004	9	1563	0.74				
NE	Nebraska City Station	6096	1	2004	10	1577	0.72				
NE	Nebraska City Station	6096	1	2004	11	1480	0.69				
NE	Nebraska City Station	6096	1	2004	12	1760	0.76	0.70	0.76	0.65	0.06
NE	Nebraska City Station	6096	1	2005	1	1664	0.73				
NE	Nebraska City Station	6096	1	2005	2	236	0.65				
NE	Nebraska City Station	6096	1	2005	3	1663	0.72				
NE	Nebraska City Station	6096	1	2005	4	1474	0.71				
NE	Nebraska City Station	6096	1	2005	5	1437	0.74				
NE	Nebraska City Station	6096	1	2005	6	1645	0.73				
NE	Nebraska City Station	6096	1	2005	7	1676	0.73				
NE	Nebraska City Station	6096	1	2005	8	1619	0.73				
NE	Nebraska City Station	6096	1	2005	9	1491	0.74				
NE	Nebraska City Station	6096	1	2005	10	1464	0.68				
NE	Nebraska City Station	6096	1	2005	11	1537	0.76				
NE	Nebraska City Station	6096	1	2005	12	1643	0.73	0.73	0.76	0.65	0.07
NE	Platte	59	1	1997	1	220	0.65				
NE	Platte	59	1	1997	2	189	0.65				
NE	Platte	59	1	1997	3	190	0.65				
NE	Platte	59	1	1997	4	163	0.66				
NE	Platte	59	1	1997	5	203	0.63				
NE	Platte	59	1	1997	6	222	0.69				
NE	Platte	59	1	1997	7	223	0.63				
NE	Platte	59	1	1997	8	218	0.64				
NE	Platte	59	1	1997	9	79	0.67				
NE	Platte	59	1	1997	10		-				
NE	Platte	59	1	1997	11	119	0.62				
NE	Platte	59	1	1997	12	180	0.60	0.64	0.69	0.60	0.05
NE	Platte	59	1	1998	1	278	0.90				
NE	Platte	59	1	1998	2	217	0.95				
NE	Platte	59	1	1998	3	236	0.88				
NE	Platte	59	1	1998	4	200	0.82				
NE	Platte	59	1	1998	5	163	0.75				
NE	Platte	59	1	1998	6	190	0.67				
NE	Platte	59	1	1998	7	241	0.72				
NE	Platte	59	1	1998	8	273	0.82				
NE	Platte	59	1	1998	9	250	0.85				
NE	Platte	59	1	1998	10	185	0.97				
NE	Platte	59	1	1998	11	259	0.89				
NE	Platte	59	1	1998	12	292	0.92	0.84	0.97	0.67	0.17
NE	Platte	59	1	1999	1	244	0.75				
NE	Platte	59	1	1999	2	188	0.69				
NE	Platte	59	1	1999	3	228	0.70				
NE	Platte	59	1	1999	4	179	0.75				
NE	Platte	59	1	1999	5	233	0.73				
NE	Platte	59	1	1999	6	216	0.71				
NE	Platte	59	1	1999	7	323	0.72				
NE	Platte	59	1	1999	8	241	0.70				
NE	Platte	59	1	1999	9	201	0.68				
NE	Platte	59	1	1999	10	130	0.70				
NE	Platte	59	1	1999	11	191	0.79				
NE	Platte	59	1	1999	12	188	0.71	0.72	0.79	0.68	0.07
NE	Platte	59	1	2000	1	236	0.74				
NE	Platte	59	1	2000	2	208	0.70				
NE	Platte	59	1	2000	3	195	0.66				
NE	Platte	59	1	2000	4	199	0.69				
NE	Platte	59	1	2000	5	252	0.69				
NE	Platte	59	1	2000	6	215	0.65				
NE	Platte	59	1	2000	7	212	0.56				
NE	Platte	59	1	2000	8	213	0.57				
NE	Platte	59	1	2000	9	89	0.61				
NE	Platte	59	1	2000	10	180	0.79				
NE	Platte	59	1	2000	11	255	0.66				
NE	Platte	59	1	2000	12	243	0.61	0.66	0.79	0.56	0.14
NE	Platte	59	1	2001	1	237	0.63				
NE	Platte	59	1	2001	2	214	0.61				
NE	Platte	59	1	2001	3	203	0.60				
NE	Platte	59	1	2001	4	236	0.62				
NE	Platte	59	1	2001	5	200	0.59				
NE	Platte	59	1	2001	6	216	0.64				

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STATE	FACILITY_NAME	ORISPL_C	UNITID	OP_YEAR	OP_MONTH	SO2 Mass	SO2 Rate	Average	Max Rate	Min Rate	Max Difference from Average
NE	Platte	59	1	2001	7	225	0.61				
NE	Platte	59	1	2001	8	216	0.59				
NE	Platte	59	1	2001	9	167	0.56				
NE	Platte	59	1	2001	10	136	0.55				
NE	Platte	59	1	2001	11	187	0.60				
NE	Platte	59	1	2001	12	198	0.58	0.60	0.64	0.55	0.05
NE	Platte	59	1	2002	1	221	0.64				
NE	Platte	59	1	2002	2	182	0.59				
NE	Platte	59	1	2002	3	271	0.69				
NE	Platte	59	1	2002	4	174	0.65				
NE	Platte	59	1	2002	5	242	0.69				
NE	Platte	59	1	2002	6	193	0.54				
NE	Platte	59	1	2002	7	231	0.60				
NE	Platte	59	1	2002	8	215	0.59				
NE	Platte	59	1	2002	9	155	0.58				
NE	Platte	59	1	2002	10	0	0.07				
NE	Platte	59	1	2002	11	145	0.64				
NE	Platte	59	1	2002	12	220	0.60	0.62	0.69	0.07	0.55
NE	Platte	59	1	2003	1	193	0.51				
NE	Platte	59	1	2003	2	191	0.54				
NE	Platte	59	1	2003	3	217	0.56				
NE	Platte	59	1	2003	4	167	0.55				
NE	Platte	59	1	2003	5	200	0.54				
NE	Platte	59	1	2003	6	179	0.53				
NE	Platte	59	1	2003	7	197	0.52				
NE	Platte	59	1	2003	8	193	0.52				
NE	Platte	59	1	2003	9	173	0.55				
NE	Platte	59	1	2003	10	105	0.54				
NE	Platte	59	1	2003	11	179	0.51				
NE	Platte	59	1	2003	12	199	0.54	0.53	0.56	0.51	0.03
NE	Platte	59	1	2004	1	207	0.54				
NE	Platte	59	1	2004	2	197	0.52				
NE	Platte	59	1	2004	3	210	0.55				
NE	Platte	59	1	2004	4	162	0.54				
NE	Platte	59	1	2004	5	196	0.53				
NE	Platte	59	1	2004	6	169	0.49				
NE	Platte	59	1	2004	7	168	0.46				
NE	Platte	59	1	2004	8	176	0.50				
NE	Platte	59	1	2004	9	177	0.54				
NE	Platte	59	1	2004	10	90	0.49				
NE	Platte	59	1	2004	11	173	0.51				
NE	Platte	59	1	2004	12	235	0.64	0.53	0.64	0.46	0.11
NE	Platte	59	1	2005	1	210	0.54				
NE	Platte	59	1	2005	2	189	0.55				
NE	Platte	59	1	2005	3	181	0.59				
NE	Platte	59	1	2005	4	225	0.62				
NE	Platte	59	1	2005	5	228	0.59				
NE	Platte	59	1	2005	6	214	0.58				
NE	Platte	59	1	2005	7	230	0.59				
NE	Platte	59	1	2005	8	229	0.60				
NE	Platte	59	1	2005	9	215	0.62				
NE	Platte	59	1	2005	10	152	0.59				
NE	Platte	59	1	2005	11	192	0.58				
NE	Platte	59	1	2005	12	212	0.62	0.59	0.62	0.54	0.04
						505034		0.59			

Percentile of Monthly SO2 Rates	
50	0.57
95	0.81
97	0.82
99	0.90
99.5	0.96
100	1.95

Attachment D
Sunflower Holcomb
Summary of Subpart Da Emission Reports
from July '98 through June '06

Sunflower Electric Cooperative
Holcomb Unit H1

Occurrence of Inlet Coal SO2 Concentrations (30-day average) above…

Inlet SO2	Cumulative Occurrence (ascending)	Cumulative Occurrence (descending)	Individual Occurrence
1.50	-	-	-
1.45	-	-	-
1.40	-	-	-
1.35	-	-	-
1.30	-	-	-
1.25	-	-	-
1.20	-	-	-
1.15	-	-	-
1.10	-	-	-
1.05	-	-	-
1.00	-	-	-
0.99	-	-	-
0.98	-	-	-
0.97	-	-	-
0.96	-	-	-
0.95	0.1%	99.9%	0.1%
0.94	0.2%	99.8%	0.1%
0.93	0.3%	99.7%	0.4%
0.92	0.7%	99.3%	0.6%
0.91	1.3%	98.7%	0.7%
0.90	2.0%	98.0%	0.9%
0.89	2.9%	97.1%	1.3%
0.88	4.2%	95.8%	1.1%
0.87	5.3%	94.7%	0.7%
0.86	6.0%	94.0%	1.5%
0.85	7.5%	92.5%	1.5%
0.84	9.0%	91.0%	1.6%
0.83	10.6%	89.4%	2.2%
0.82	12.8%	87.2%	2.4%
0.81	15.2%	84.8%	3.3%
0.80	18.5%	81.5%	3.4%
0.79	21.9%	78.1%	3.0%
0.78	24.9%	75.1%	3.5%
0.77	28.4%	71.6%	2.5%
0.76	30.9%	69.1%	1.6%
0.75	32.5%	67.5%	1.3%
0.74	33.8%	66.2%	1.8%
0.73	35.6%	64.4%	1.0%
0.72	36.6%	63.4%	1.5%
0.71	38.1%	61.9%	0.5%
0.70	38.6%	61.4%	0.7%
0.69	39.3%	60.7%	2.3%
0.68	41.6%	58.4%	3.9%
0.67	45.5%	54.5%	6.4%
0.66	51.9%	48.1%	8.6%
0.65	60.5%	39.5%	8.5%
0.64	69.0%	31.0%	7.4%
0.63	76.4%	23.6%	8.4%
0.62	84.8%	15.2%	6.4%
0.61	91.2%	8.8%	3.4%
0.60	94.6%	5.4%	2.4%
0.59	97.0%	3.0%	1.6%
0.58	98.6%	1.4%	0.8%
0.57	99.4%	0.6%	0.5%
0.56	99.9%	0.1%	0.1%
0.55	100.0%	0.0%	0.0%
0.54	100.0%	0.0%	0.0%
0.53	100.0%	0.0%	0.0%
0.52	100.0%	0.0%	0.0%
0.51	100.0%	0.0%	0.0%
0.50	100.0%	0.0%	-
0.49	-	-	-
0.48	-	-	-
0.47	-	-	-
0.46	-	-	-
0.45	-	-	-
0.44	-	-	-
0.43	-	-	-
0.42	-	-	-
0.41	-	-	-
0.40	-	-	-
0.39	-	-	-
0.38	-	-	-
0.37	-	-	-
0.36	-	-	-
0.35	-	-	-

Occurrence of Outlet SO2 Concentrations (30-day average) above…

Outlet SO2	Cumulative Occurrence (ascending)	Cumulative Occurrence (descending)	Individual Occurrence
0.50	-	-	-
0.49	-	-	-
0.48	-	-	-
0.47	-	-	-
0.46	-	-	-
0.45	-	-	-
0.44	-	-	-
0.43	-	-	-
0.42	-	-	-
0.41	-	-	-
0.40	-	-	-
0.39	-	-	-
0.38	-	-	-
0.37	-	-	-
0.36	-	-	-
0.35	-	-	-
0.34	-	-	-
0.33	-	-	-
0.32	-	-	-
0.31	-	-	-
0.30	-	-	-
0.29	-	-	-
0.28	-	-	-
0.27	-	-	-
0.26	-	-	-
0.25	-	-	-
0.24	-	-	-
0.23	-	-	-
0.22	-	-	-
0.21	0.2%	99.8%	0.3%
0.20	0.5%	99.5%	1.4%
0.19	1.9%	98.1%	4.0%
0.18	5.9%	94.1%	11.1%
0.17	17.0%	83.0%	21.5%
0.16	38.5%	61.5%	18.7%
0.15	57.2%	42.8%	11.2%
0.14	68.4%	31.6%	8.1%

Occurrence of SO2 Percent Removal (30-day average) above…

% Removal	Cumulative Occurrence (ascending)	Cumulative Occurrence (descending)	Individual Occurrence
100.0%	-	-	-
99.0%	-	-	-
98.0%	-	-	-
97.0%	-	-	-
96.0%	-	-	-
95.0%	-	-	-
94.0%	-	-	-
93.0%	-	-	-
92.0%	-	-	-
91.0%	-	-	-
90.0%	-	-	-
89.0%	-	-	-
88.0%	-	-	-
87.0%	0.0%	100.0%	2.4%
86.0%	2.4%	97.6%	4.3%
85.0%	6.7%	93.3%	4.3%
84.0%	11.0%	89.0%	4.7%
83.0%	15.7%	84.3%	4.2%
82.0%	19.9%	80.1%	6.3%
81.0%	26.2%	73.8%	8.5%
80.0%	34.7%	65.3%	8.3%
79.0%	43.0%	57.0%	10.4%
78.0%	53.4%	46.6%	7.0%
77.0%	60.4%	39.6%	6.8%
76.0%	67.2%	32.8%	14.8%
75.0%	82.0%	18.0%	14.1%
74.0%	96.1%	3.9%	3.6%
73.0%	99.7%	0.3%	0.3%
72.0%	100.0%	0.0%	0.0%
71.0%	100.0%	0.0%	-
70.0%	-	-	-
69.0%	-	-	-
68.0%	-	-	-
67.0%	-	-	-
66.0%	-	-	-
65.0%	-	-	-
64.0%	-	-	-
63.0%	-	-	-
62.0%	-	-	-
61.0%	-	-	-
60.0%	-	-	-

Occurrence of NOx Concentrations (30-day average) above…

Outlet NOx	Cumulative Occurrence (ascending)	Cumulative Occurrence (descending)	Individual Occurrence
0.50	-	-	-
0.49	-	-	-
0.48	-	-	-
0.47	-	-	-
0.46	-	-	-
0.45	-	-	-
0.44	-	-	-
0.43	-	-	-
0.42	-	-	-
0.41	-	-	-
0.40	-	-	-
0.39	-	-	-
0.38	-	-	-
0.37	-	-	-
0.36	-	-	-
0.35	-	-	-
0.34	0.2%	99.8%	4.4%
0.33	4.6%	95.4%	13.8%
0.32	18.4%	81.6%	7.5%
0.31	25.9%	74.1%	10.1%
0.30	36.0%	64.0%	6.5%
0.29	42.5%	57.5%	14.6%
0.28	57.1%	42.9%	22.6%
0.27	79.7%	20.3%	16.0%
0.26	95.7%	4.3%	4.2%
0.25	99.9%	0.1%	0.0%
0.24	99.9%	0.1%	0.1%
0.23	100.0%	0.0%	0.0%
0.22	100.0%	0.0%	0.0%
0.21	100.0%	0.0%	0.0%
0.20	100.0%	0.0%	-
0.19	-	-	-
0.18	-	-	-
0.17	-	-	-
0.16	-	-	-
0.15	-	-	-
0.14	-	-	-

Occurrence of CO Concentrations (30-day average) above…

Outlet CO	Cumulative Occurrence (ascending)	Cumulative Occurrence (descending)	Individual Occurrence
0.20	-	-	-
0.19	-	-	-
0.18	-	-	-
0.17	-	-	-
0.16	-	-	-
0.15	-	-	-
0.14	-	-	-

Occurrence of Outlet SO2 at "Hypothetical" 90% Removal (30-day average) above…

Outlet SO2	Cumulative Occurrence (ascending)	Cumulative Occurrence (descending)	Individual Occurrence
0.200	-	-	-
0.190	-	-	-
0.180	-	-	-
0.170	-	-	-
0.160	-	-	-
0.150	-	-	-
0.140	-	-	-

Occurrence of Outlet SO2 at "Hypothetical" 92% Removal (30-day average) above…

Outlet SO2	Cumulative Occurrence (ascending)	Cumulative Occurrence (descending)	Individual Occurrence
0.200	-	-	-
0.190	-	-	-
0.180	-	-	-
0.170	-	-	-
0.160	-	-	-
0.150	-	-	-
0.140	-	-	-

Occurrence of Outlet SO2 at "Hypothetical" 94% Removal (30-day average) above…

Outlet SO2	Cumulative Occurrence (ascending)	Cumulative Occurrence (descending)	Individual Occurrence
0.200	-	-	-
0.190	-	-	-
0.180	-	-	-
0.170	-	-	-
0.160	-	-	-
0.150	-	-	-
0.140	-	-	-

Sunflower Electric Cooperative
Holcomb Unit H1

Occurrence of Inlet Coal SO2 Concentrations (30-day average) above…				Occurrence of Outlet SO2 Concentrations (30-day average) above…				Occurrence of SO2 Percent Removal (30-day average) above…				Occurrence of NOx Concentrations (30-day average) above…			
Inlet SO2	Cumulative Occurrence (ascending)	Cumulative Occurrence (descending)	Individual Occurrence	Outlet SO2	Cumulative Occurrence (ascending)	Cumulative Occurrence (descending)	Individual Occurrence	% Removal	Cumulative Occurrence (ascending)	Cumulative Occurrence (descending)	Individual Occurrence	Outlet NOx	Cumulative Occurrence (ascending)	Cumulative Occurrence (descending)	Individual Occurrence
				0.13	76.5%	23.5%	8.9%					0.13	-	-	-
				0.12	85.4%	14.6%	8.1%					0.12	-	-	-
				0.11	93.5%	6.5%	4.4%					0.11	-	-	-
				0.10	97.9%	2.1%	0.6%					0.10	-	-	-
				0.09	98.5%	1.5%	-					0.09	-	-	-
				0.08	-	-	-					0.08	-	-	-
				0.07	-	-	-					0.07	-	-	-
				0.06	-	-	-					0.06	-	-	-
				0.05	-	-	-					0.05	-	-	-
				0.04	-	-	-					0.04	-	-	-
				0.03	-	-	-					0.03	-	-	-
				0.02	-	-	-					0.02	-	-	-
				0.01	-	-	-					0.01	-	-	-
				0.00	-	-	-					0.00	-	-	-

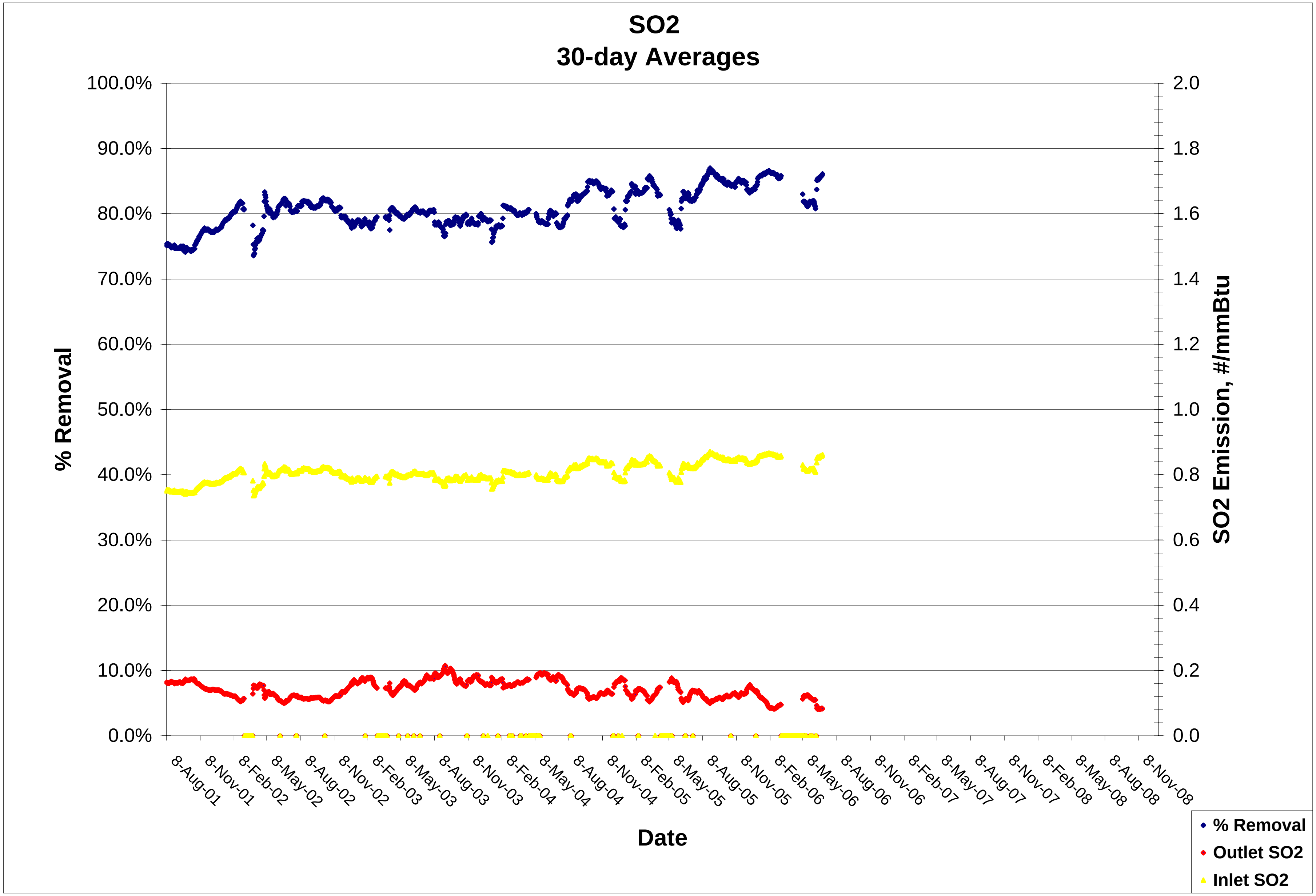
Occurrence of CO Concentrations (30-day average) above…				Occurrence of Outlet SO2 at "Hypothetical" 90% Removal (30-day average) above…				Occurrence of Outlet SO2 at "Hypothetical" 92% Removal (30-day average) above…				Occurrence of Outlet SO2 at "Hypothetical" 94% Removal (30-day average) above…			
Outlet CO	Cumulative Occurrence (ascending)	Cumulative Occurrence (descending)	Individual Occurrence	Outlet SO2	Cumulative Occurrence (ascending)	Cumulative Occurrence (descending)	Individual Occurrence	Outlet SO2	Cumulative Occurrence (ascending)	Cumulative Occurrence (descending)	Individual Occurrence	Outlet SO2	Cumulative Occurrence (ascending)	Cumulative Occurrence (descending)	Individual Occurrence
0.13	-	-	-	0.130	-	-	-	0.130	-	-	-	0.130	-	-	-
0.12	-	-	-	0.120	-	-	-	0.120	-	-	-	0.120	-	-	-
0.11	-	-	-	0.110	-	-	-	0.110	-	-	-	0.110	-	-	-
0.10	-	-	-	0.100	-	-	-	0.100	-	-	-	0.100	-	-	-
0.09	-	-	-	0.090	2.0%	98.0%	16.3%	0.090	-	-	-	0.090	-	-	-
0.08	-	-	-	0.080	18.3%	81.7%	20.2%	0.075	0.2%	99.8%	4.4%	0.080	-	-	-
0.07	-	-	-	0.070	38.5%	61.5%	55.8%	0.070	4.6%	95.4%	27.8%	0.070	-	-	-
0.06	-	-	-	0.060	94.3%	5.7%	5.6%	0.060	32.4%	67.6%	46.8%	0.060	-	-	-
0.05	-	-	-	0.050	99.9%	0.1%	0.0%	0.050	79.2%	20.8%	20.7%	0.050	9.9%	90.1%	36.9%
0.04	2.9%	97.1%	41.4%	0.040	99.9%	0.1%	0.0%	0.040	99.9%	0.1%	0.0%	0.040	46.8%	53.2%	53.1%
0.03	44.3%	55.7%	50.7%	0.030	99.9%	0.1%	0.0%	0.030	99.9%	0.1%	0.0%	0.030	99.9%	0.1%	0.0%
0.02	95.0%	5.0%	-	0.020	99.9%	0.1%	0.0%	0.020	99.9%	0.1%	0.0%	0.020	99.9%	0.1%	0.0%
0.01	-	-	-	0.010	99.9%	0.1%	0.1%	0.010	99.9%	0.1%	0.1%	0.010	99.9%	0.1%	0.1%
0.00	-	-	-	0.000	100.0%	0.0%	-	0.000	100.0%	0.0%	-	0.000	100.0%	0.0%	-

Sunflower Electric Cooperative
Holcomb Unit H1
SO2 Emissions Scrubber Performance

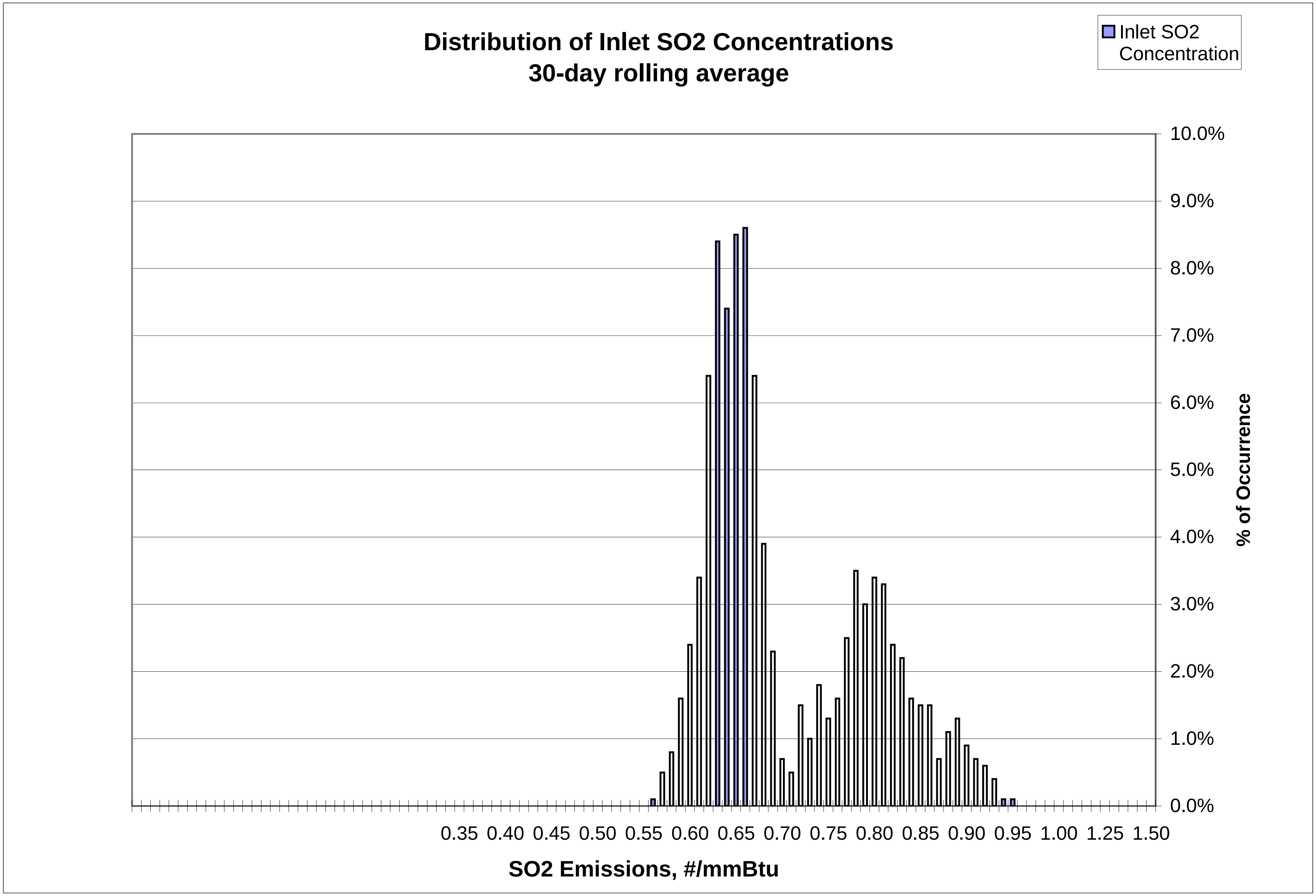
Year	Quarter	SO2 Emissions, #/mmBtu																									
		0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16	0.17	0.18	0.19	0.20	0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.29	0.30
1998	1																										
1998	2																										
1998	3	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	42%	61%	87%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
1998	4	0%	0%	0%	0%	0%	0%	0%	0%	10%	55%	88%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
1999	1	0%	0%	0%	0%	0%	0%	0%	0%	0%	9%	38%	88%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
1999	2	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	24%	70%	97%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
1999	3	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	16%	42%	60%	82%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
1999	4	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	83%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2000	1	0%	0%	0%	0%	0%	0%	0%	0%	1%	13%	33%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2000	2	0%	0%	0%	0%	0%	0%	0%	0%	9%	41%	67%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2000	3	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	20%	33%	84%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2000	4	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	45%	87%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2001	1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	27%	77%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2001	2	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	27%	87%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2001	3	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	56%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2001	4	0%	0%	0%	0%	0%	0%	0%	0%	0%	46%	58%	72%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2002	1	0%	0%	0%	0%	0%	0%	30%	57%	91%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2002	2	0%	0%	0%	0%	0%	0%	30%	57%	91%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2002	3	0%	0%	0%	0%	0%	0%	36%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2002	4	0%	0%	0%	0%	0%	0%	34%	60%	70%	81%	90%	97%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2003	1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	17%	37%	68%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2003	2	0%	0%	0%	0%	0%	0%	0%	2%	13%	38%	71%	91%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2003	3	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	9%	14%	51%	77%	91%	99%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2003	4	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	40%	81%	95%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2004	1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	29%	73%	96%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2004	2	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	40%	58%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2004	3	0%	0%	0%	0%	0%	0%	1%	4%	26%	52%	61%	72%	81%	96%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2004	4	0%	0%	0%	0%	0%	0%	5%	33%	68%	76%	77%	83%	95%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2005	1	0%	0%	0%	0%	0%	1%	18%	39%	57%	90%	91%	91%	99%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2005	2	0%	0%	0%	0%	0%	5%	29%	30%	40%	54%	67%	81%	98%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2005	3	0%	0%	0%	0%	0%	8%	44%	64%	78%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2005	4	0%	0%	0%	0%	0%	0%	4%	37%	72%	84%	97%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2006	1	0%	0%	0%	13%	50%	60%	75%	90%	96%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2006	2	0%	0%	0%	34%	36%	36%	60%	94%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2006	3																										
2006	4																										

Year	Quarter	SO2 % Removal																													
		67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
1998	1																														
1998	2																														
1998	3	100%	100%	100%	100%	100%	100%	100%	92%	66%	42%	11%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1998	4	100%	100%	100%	100%	100%	100%	100%	100%	100%	81%	67%	50%	17%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1999	1	100%	100%	100%	100%	100%	100%	100%	90%	86%	66%	35%	10%	9%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1999	2	100%	100%	100%	100%	100%	100%	100%	92%	44%	18%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1999	3	100%	100%	100%	100%	100%	100%	100%	90%	49%	36%	10%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1999	4	100%	100%	100%	100%	100%	100%	100%	100%	99%	53%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2000	1	100%	100%	100%	100%	100%	100%	100%	100%	100%	44%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2000	2	100%	100%	100%	100%	100%	100%	100%	100%	100%	74%	52%	12%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2000	3	100%	100%	100%	100%	100%	100%	100%	100%	60%	24%	19%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2000	4	100%	100%	100%	100%	100%	100%	100%	100%	79%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2001	1	100%	100%	100%	100%	100%	99%	99%	95%	64%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2001	2	100%	100%	100%	100%	100%	100%	100%	100%	69%	31%	17%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2001	3	100%	100%	100%	100%	100%	100%	100%	100%	93%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2001	4	100%	100%	100%	100%	100%	100%	100%	100%	92%	72%	62%	32%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2002	1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	88%	61%	36%	16%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2002	2	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	88%	61%	36%	16%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2002	3	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	86%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2002	4	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	92%	73%	58%	32%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2003	1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	66%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2003	2	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	99%	80%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2003	3	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	92%	68%	42%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2003	4	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	85%	24%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2004	1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	94%	90%	64%	52%	32%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2004	2	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	91%	58%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2004	3	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	82%	71%	61%	58%	38%	6%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2004	4	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	95%	78%	77%	76%	76%	61%	32%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2005	1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	91%	91%	91%	90%	84%	53%	21%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2005	2	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	83%	59%	54%	51%	43%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2005	3	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	82%	71%	63%	38%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2005	4	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	94%	57%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2006	1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	97%	91%	9%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2006	2	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	81%	38%	36%	34%	19%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2006	3																														
2006	4																														

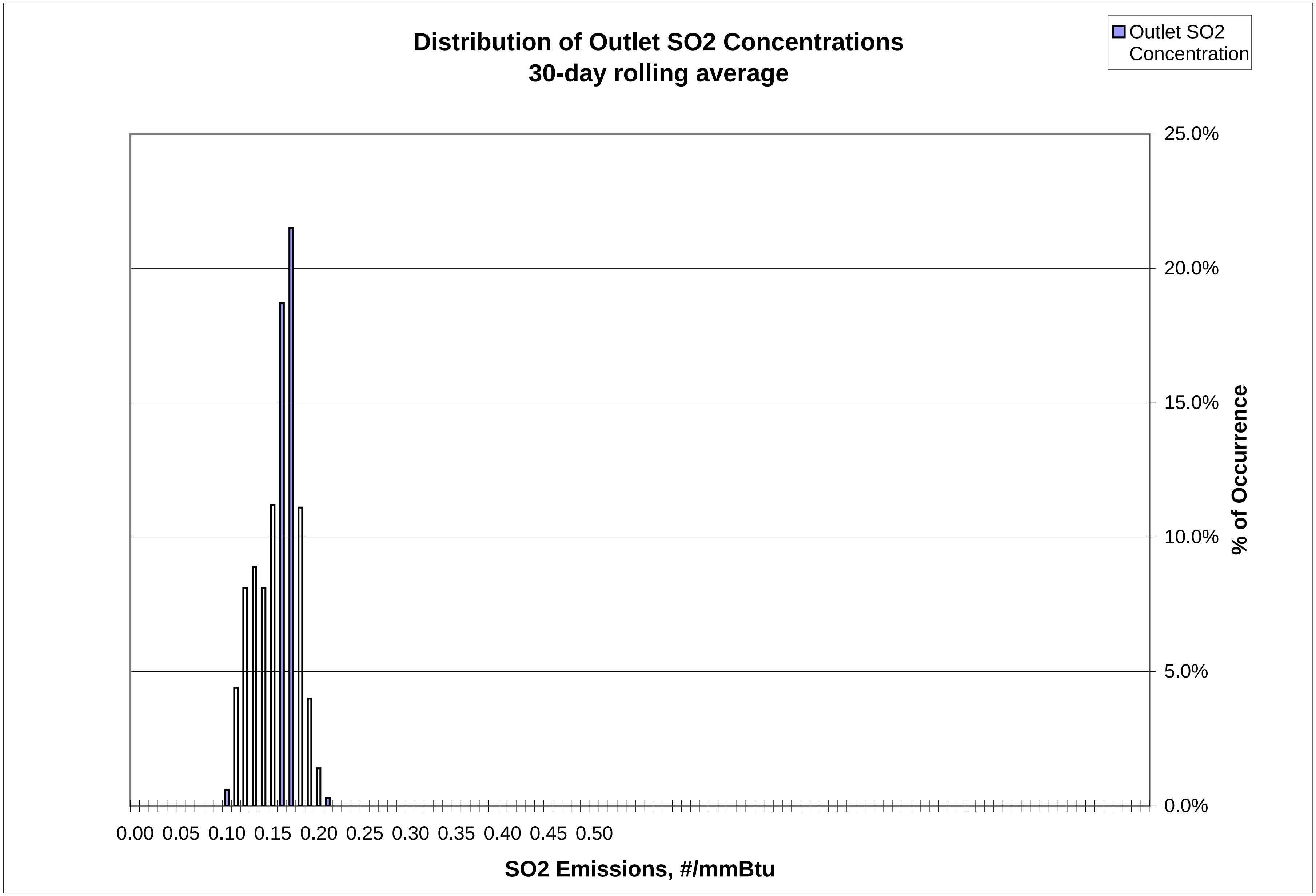
Sunflower Electric Cooperative
Holcomb Unit H1



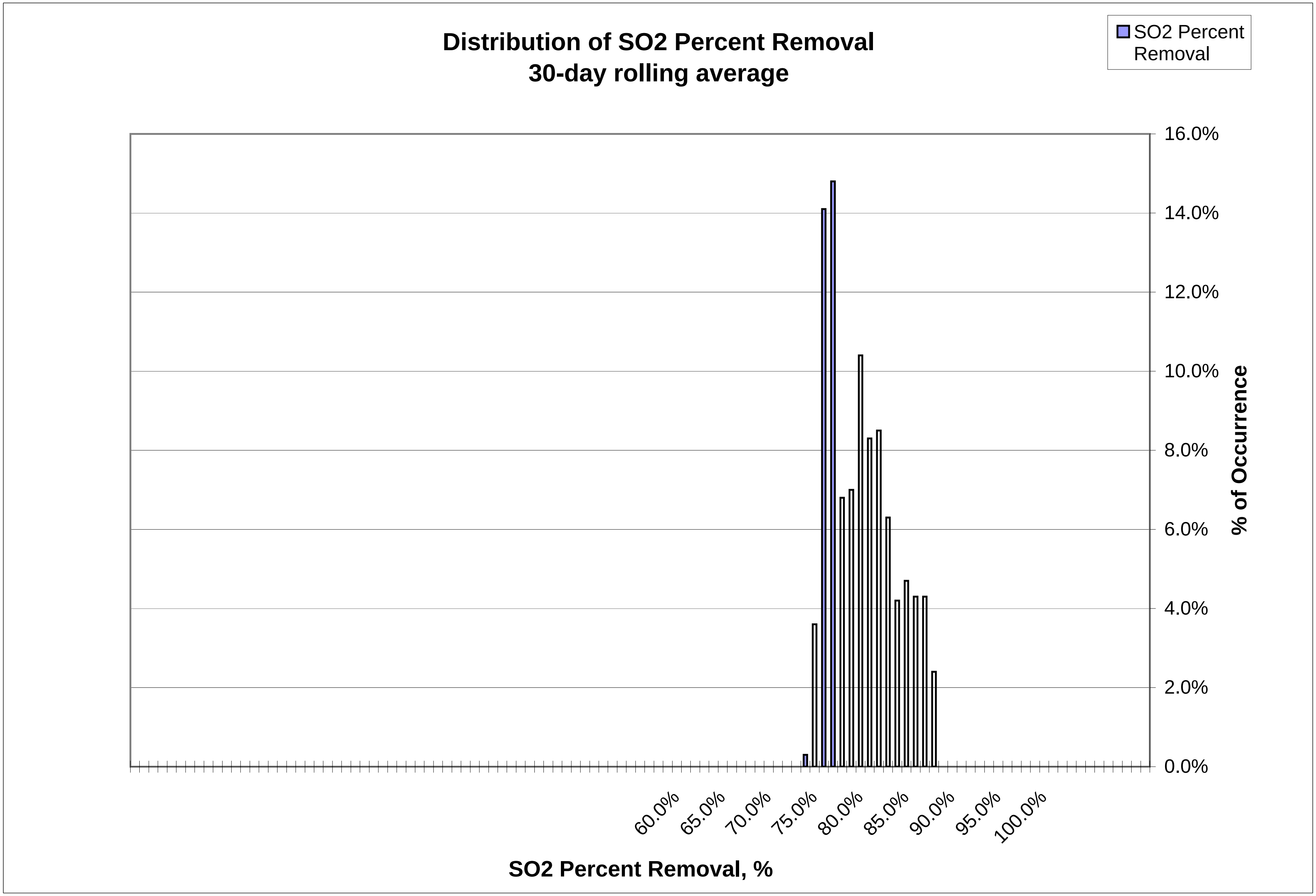
Sunflower Electric Cooperative
Holcomb Unit H1



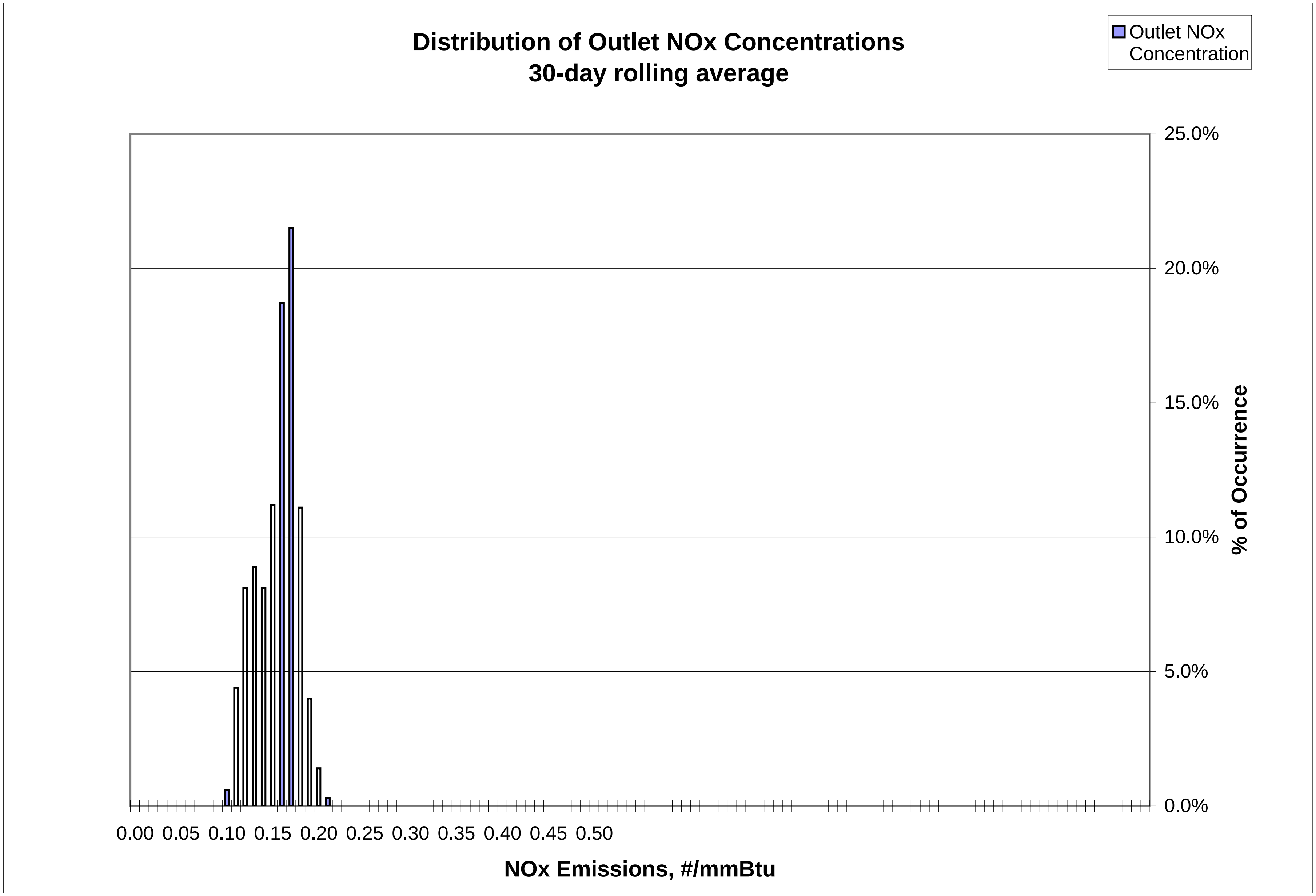
Sunflower Electric Cooperative
Holcomb Unit H1



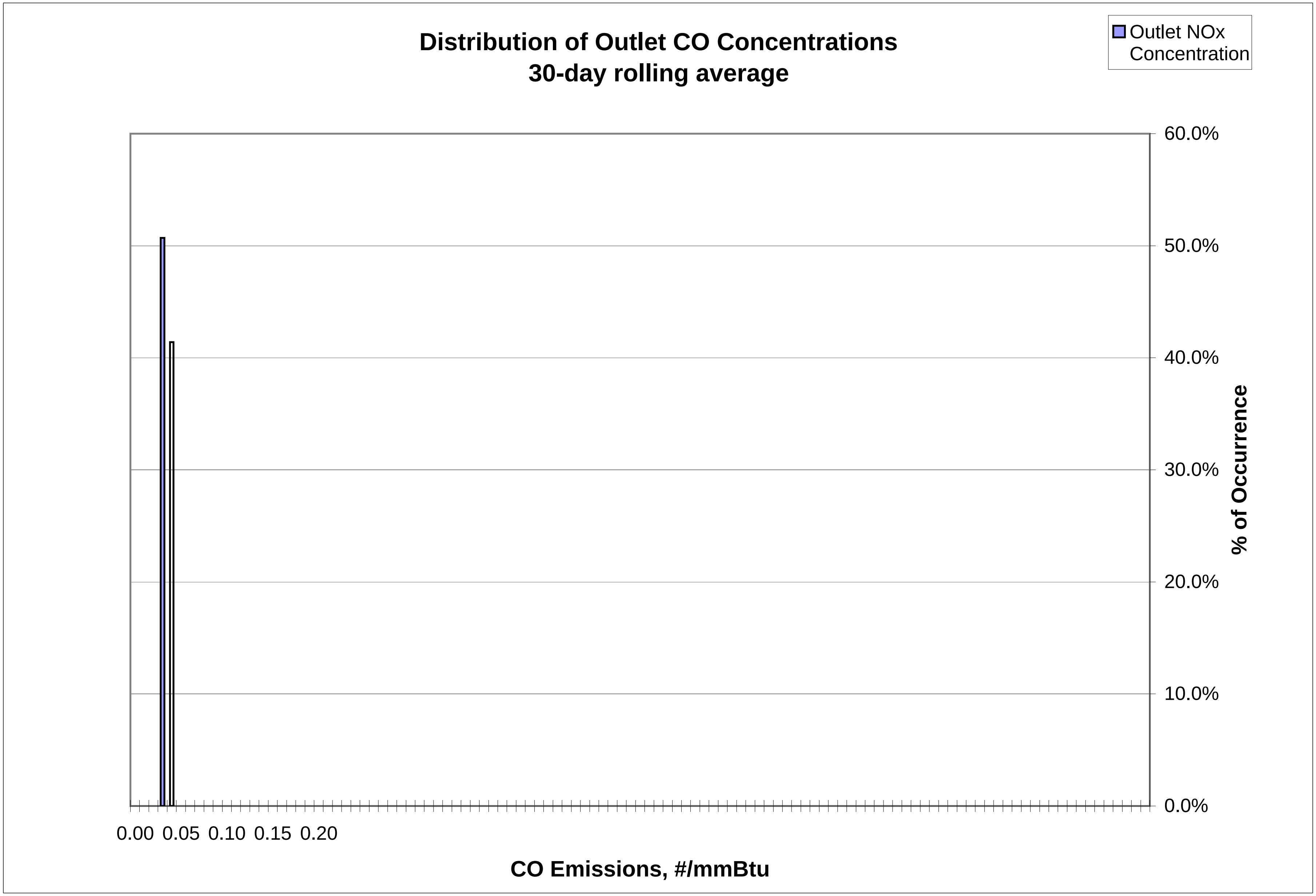
Sunflower Electric Cooperative
Holcomb Unit H1

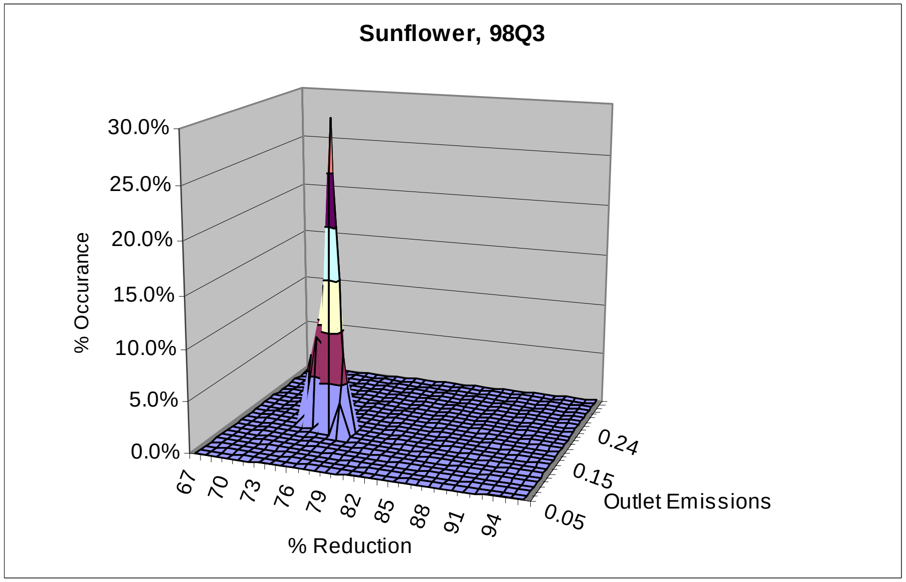


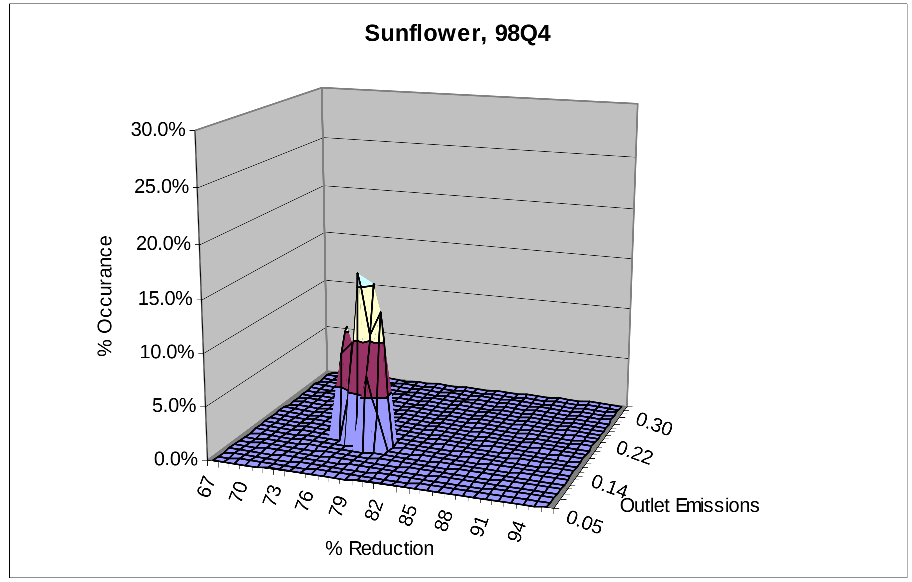
Sunflower Electric Cooperative
Holcomb Unit H1

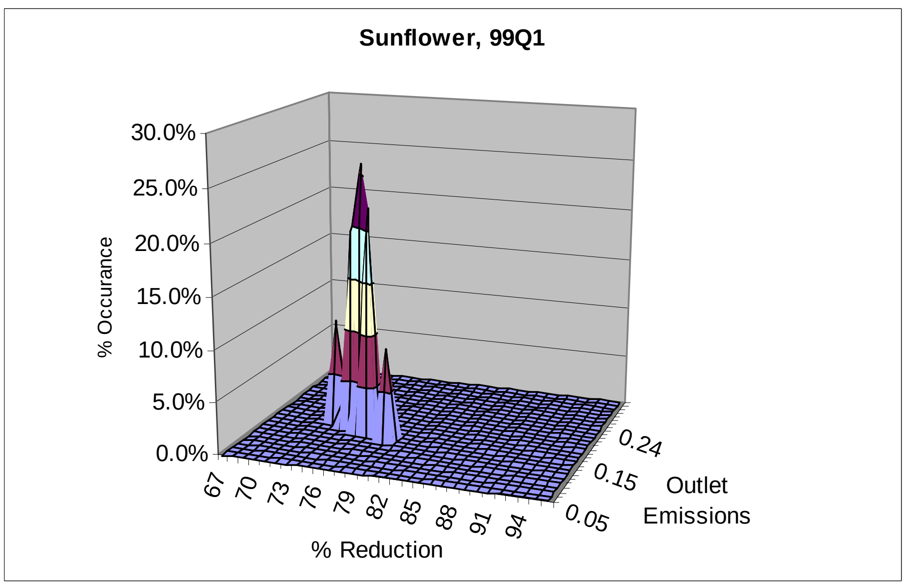


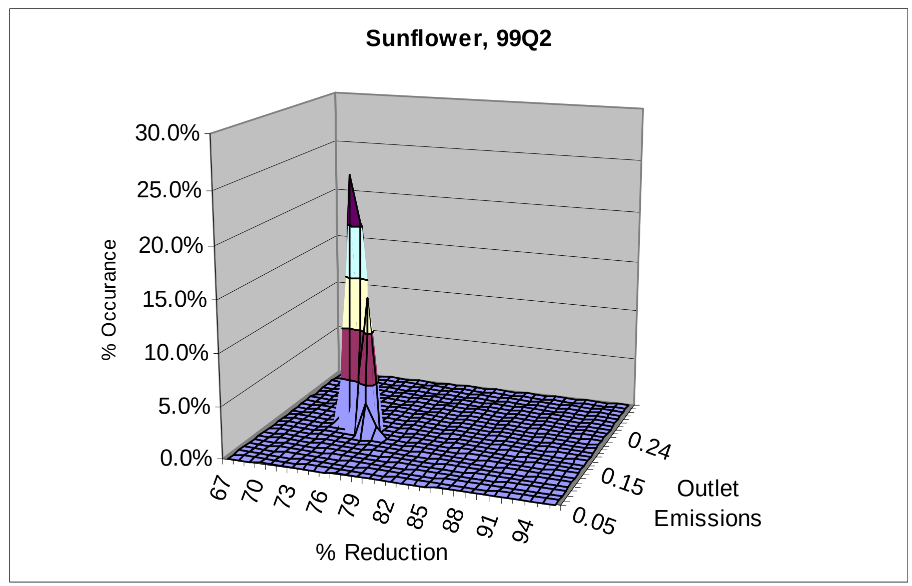
Sunflower Electric Cooperative
Holcomb Unit H1

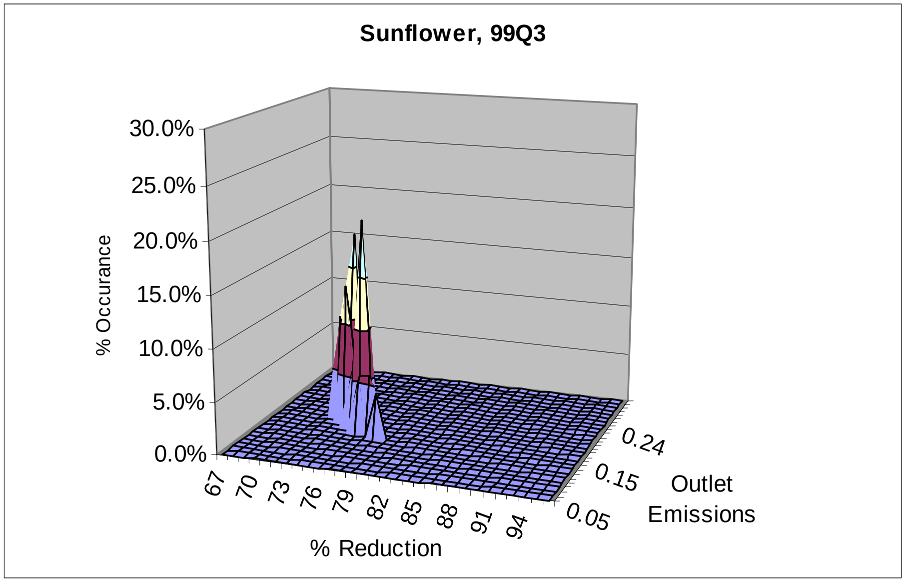


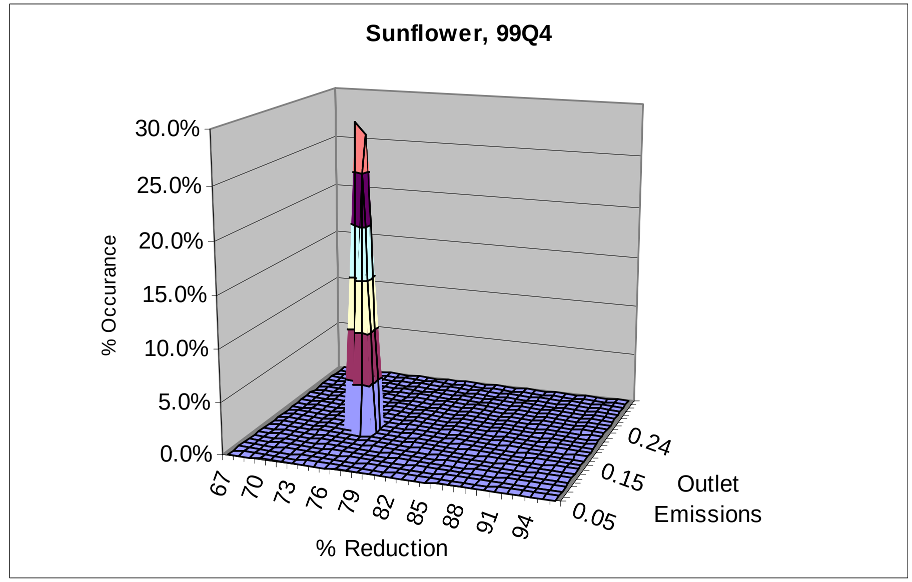

Sunflower, 98Q3
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
% Occurance
67 70 73 76 79 82 85 88 91 94
% Reduction
0.05 0.15 0.24
Outlet Emissions

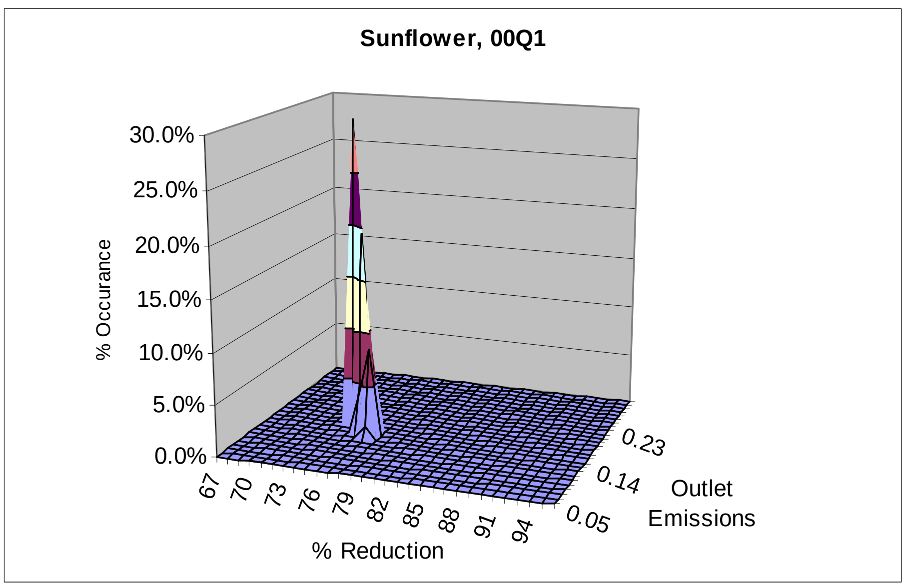

Sunflower, 98Q4
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
% Occurance
67 70 73 76 79 82 85 88 91 94
% Reduction
0.05 0.14 0.22 0.30
Outlet Emissions

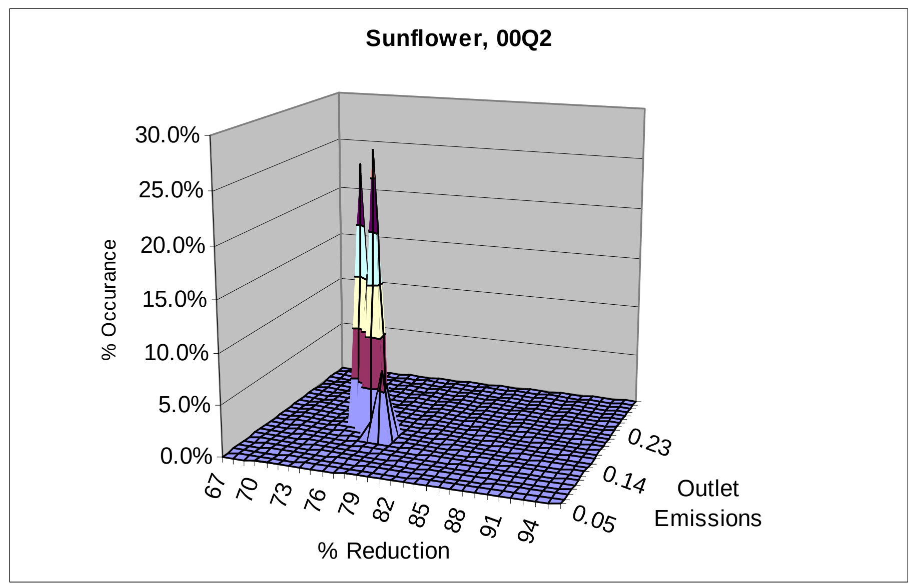

Sunflower, 99Q1
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
% Occurance
67 70 73 76 79 82 85 88 91 94
% Reduction
0.05 0.15 0.24
Outlet Emissions

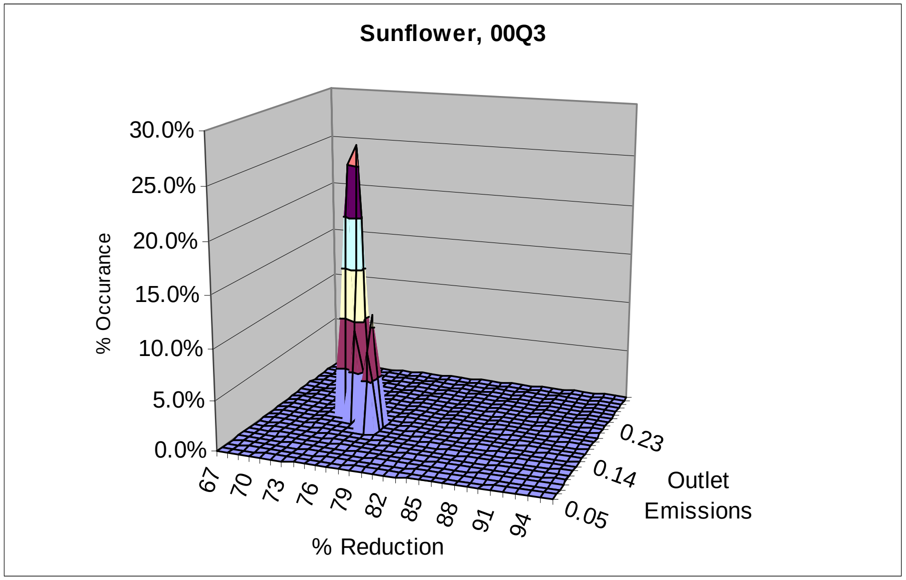

Sunflower, 99Q2
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
% Occurance
67 70 73 76 79 82 85 88 91 94
% Reduction
0.05 0.15 0.24
Outlet Emissions

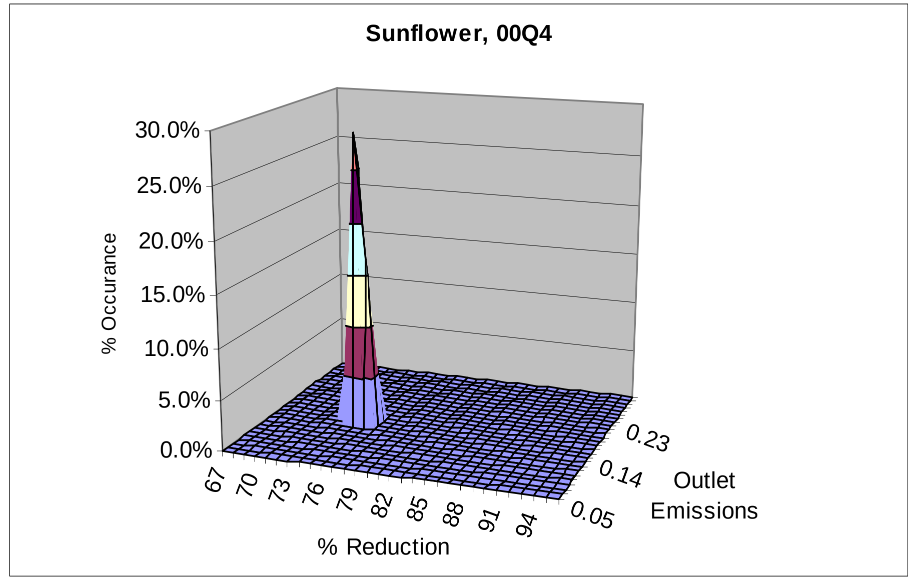

Sunflower, 99Q3
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
% Occurance
67 70 73 76 79 82 85 88 91 94
% Reduction
0.05 0.15 0.24
Outlet Emissions

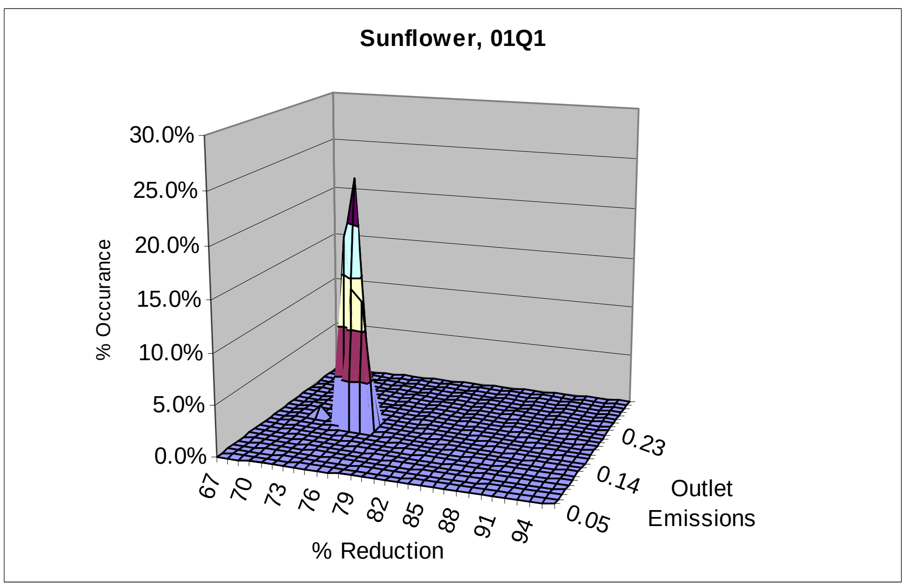

Sunflower, 99Q4
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
% Occurance
67 70 73 76 79 82 85 88 91 94
% Reduction
0.05 0.15 0.24
Outlet Emissions

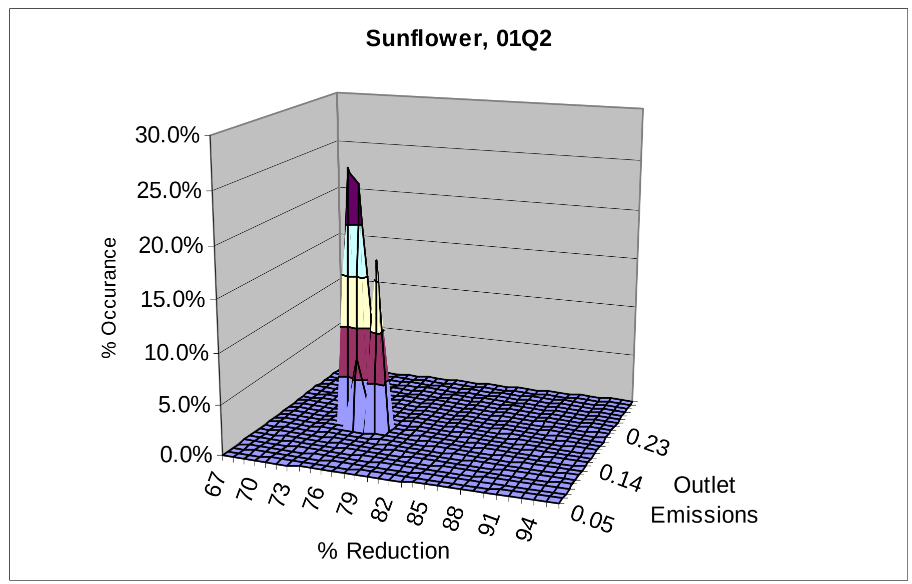

Sunflower, 00Q1
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
% Occurance
67 70 73 76 79 82 85 88 91 94
% Reduction
0.05 0.14 0.23
Outlet Emissions

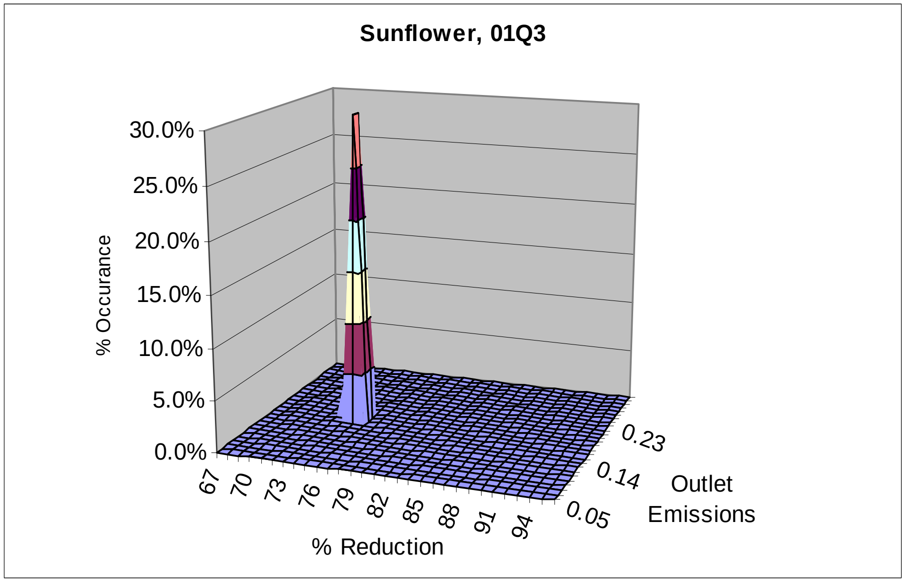

Sunflower, 00Q2
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
% Occurance
67 70 73 76 79 82 85 88 91 94
% Reduction
0.05 0.14 0.23
Outlet Emissions

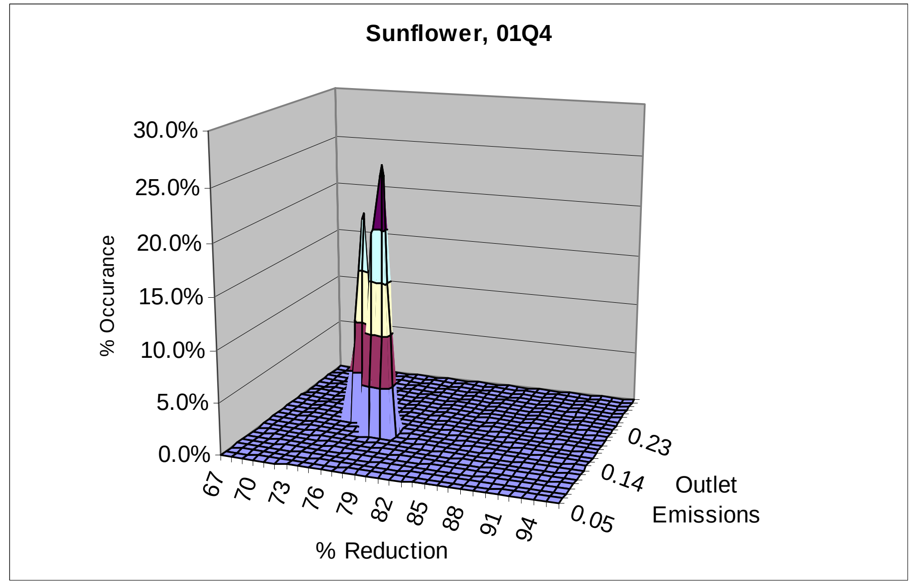

Sunflower, 00Q3
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
% Occurance
67
70
73
76
79
82
85
88
91
94
% Reduction
0.05
0.14
0.23
Outlet Emissions

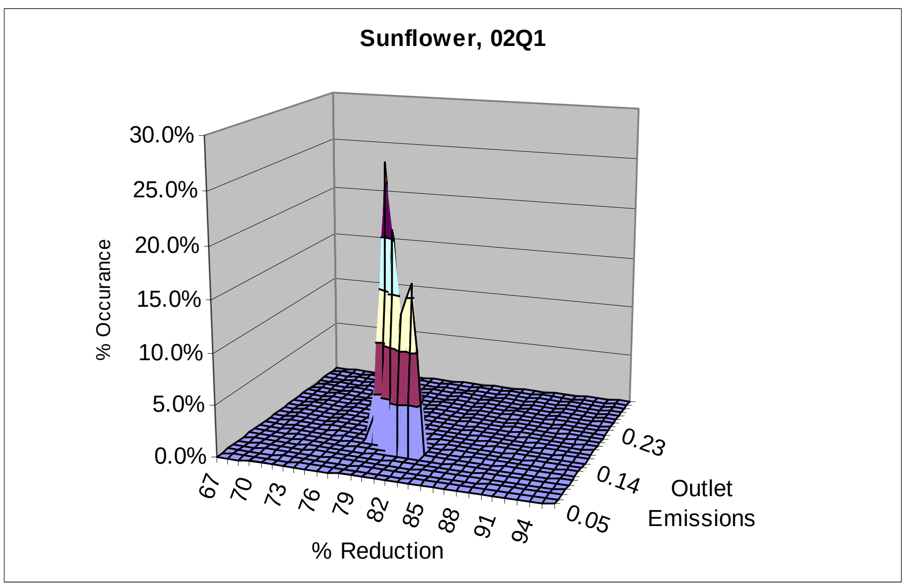

Sunflower, 00Q4
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
% Occurance
67
70
73
76
79
82
85
88
91
94
% Reduction
0.05
0.14
0.23
Outlet Emissions

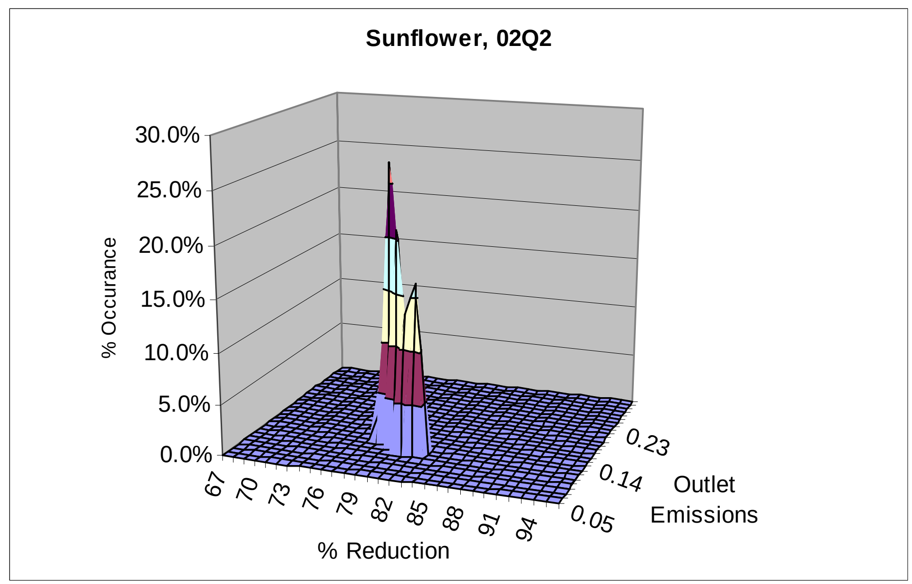

Sunflower, 01Q1
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
% Occurance
67
70
73
76
79
82
85
88
91
94
% Reduction
0.05
0.14
0.23
Outlet Emissions


Sunflower, 01Q2
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
% Occurance
67
70
73
76
79
82
85
88
91
94
% Reduction
0.05
0.14
0.23
Outlet Emissions


Sunflower, 01Q3
% Occurance
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
67 70 73 76 79 82 85 88 91 94
% Reduction
0.05 0.14 0.23
Outlet Emissions


Sunflower, 01Q4
% Occurance
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
67 70 73 76 79 82 85 88 91 94
% Reduction
0.05 0.14 0.23
Outlet Emissions


Sunflower, 02Q1
% Occurance
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
67 70 73 76 79 82 85 88 91 94
% Reduction
0.05 0.14 0.23
Outlet Emissions


Sunflower, 02Q2
% Occurance
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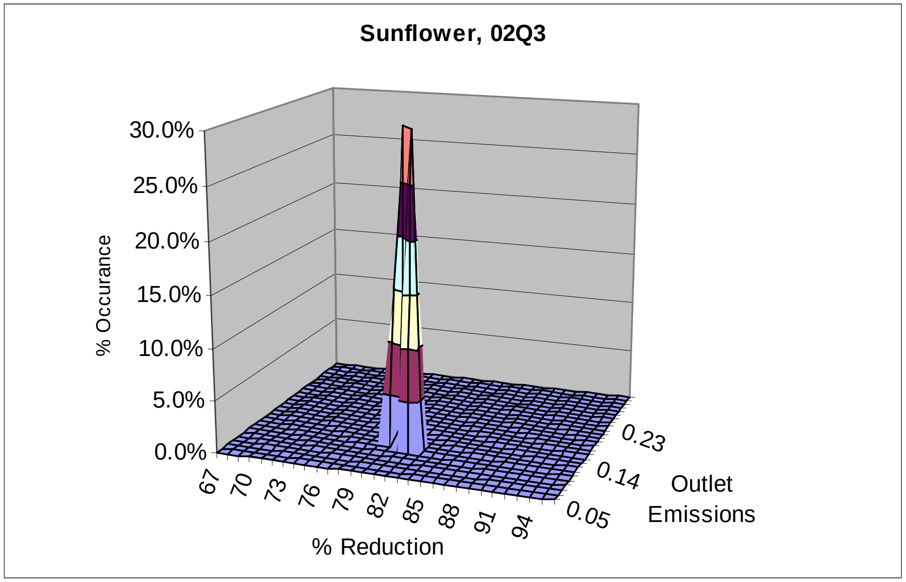
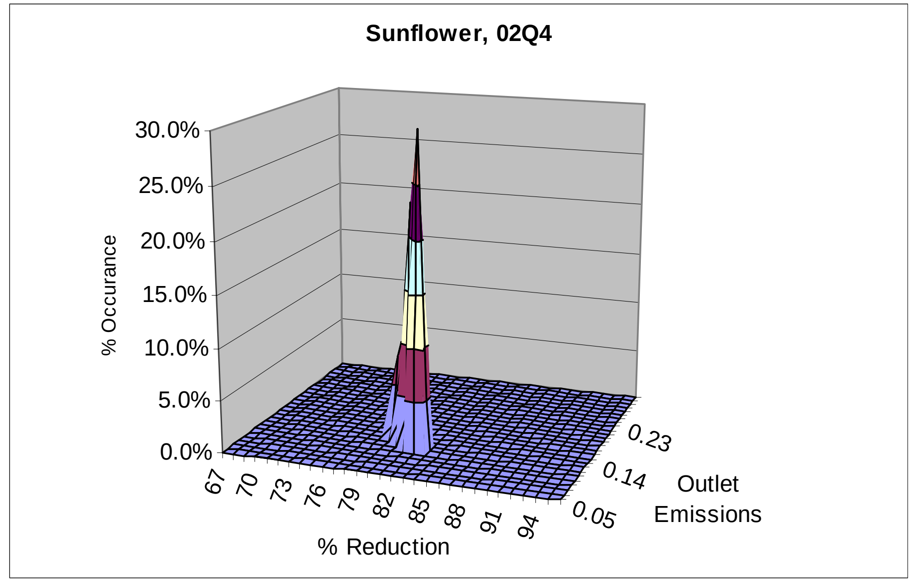
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
67 70 73 76 79 82 85 88 91 94
% Reduction
0.05 0.14 0.23
Outlet Emissions



Sunflower, 02Q3
% Occurance
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
67 70 73 76 79 82 85 88 91 94
% Reduction
0.05 0.14 0.23
Outlet Emissions



Sunflower, 02Q4
% Occurance
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25.0%
20.0%
15.0%
10.0%
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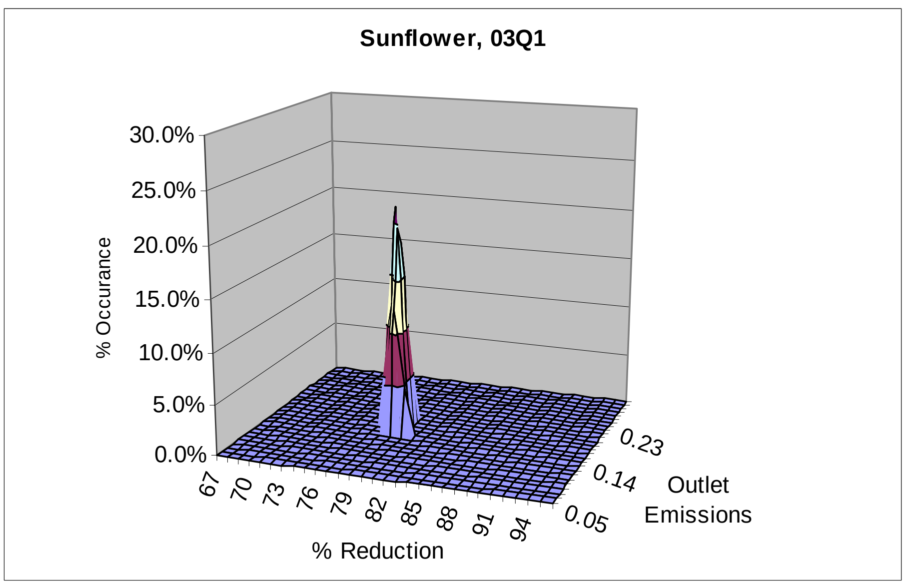
67 70 73 76 79 82 85 88 91 94
% Reduction
0.05 0.14 0.23
Outlet Emissions



Sunflower, 03Q1
% Occurance
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25.0%
20.0%
15.0%
10.0%
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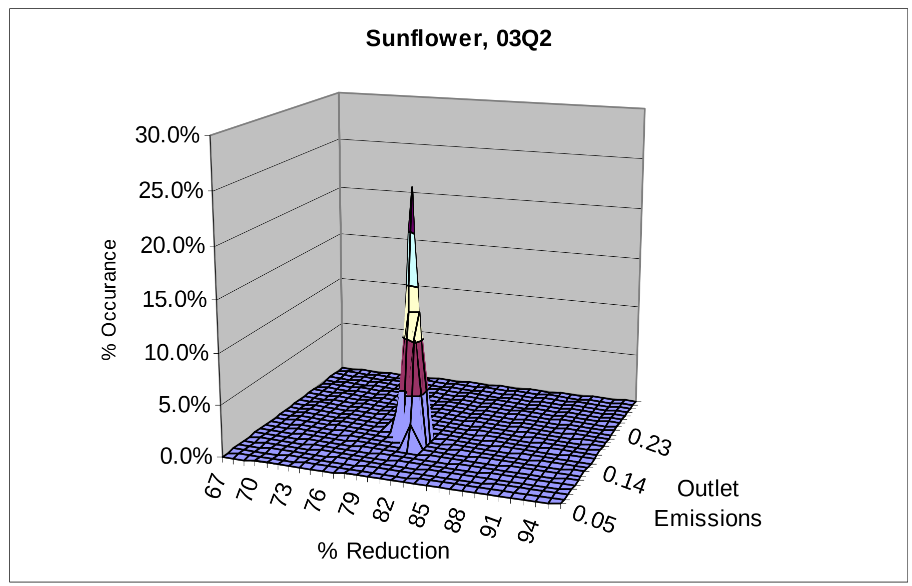
% Reduction
0.05 0.14 0.23
Outlet Emissions



Sunflower, 03Q2
% Occurance
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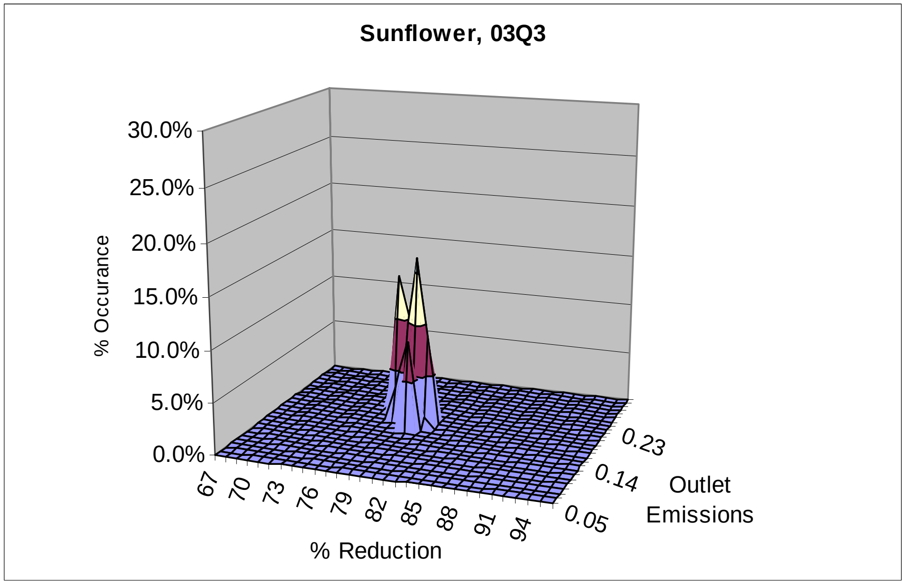
% Reduction
0.05 0.14 0.23
Outlet Emissions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% Reduction
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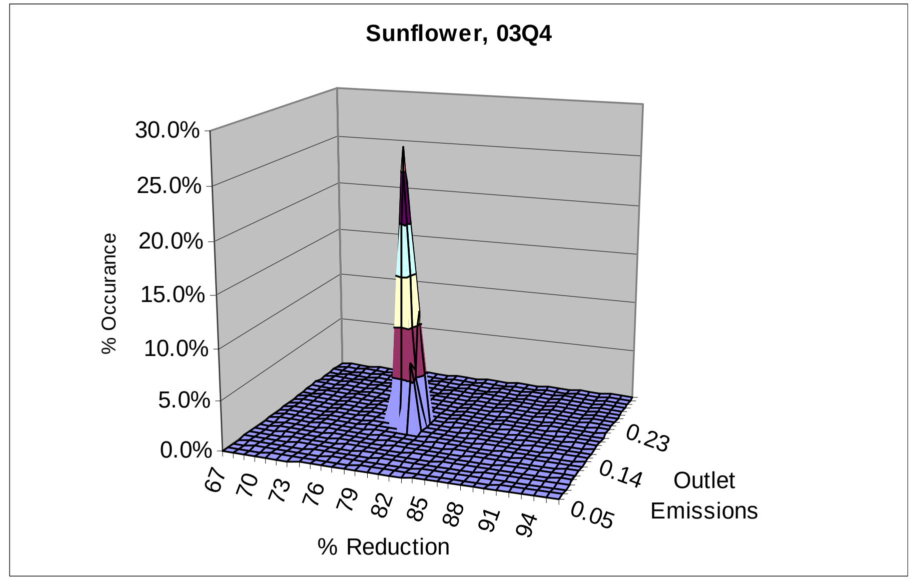
Outlet Emissions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% Reduction
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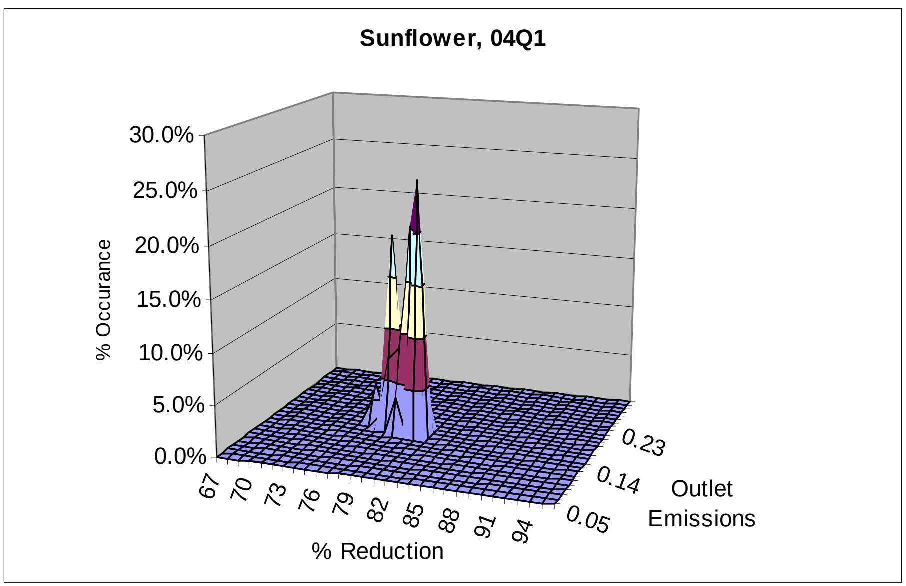
Outlet Emissions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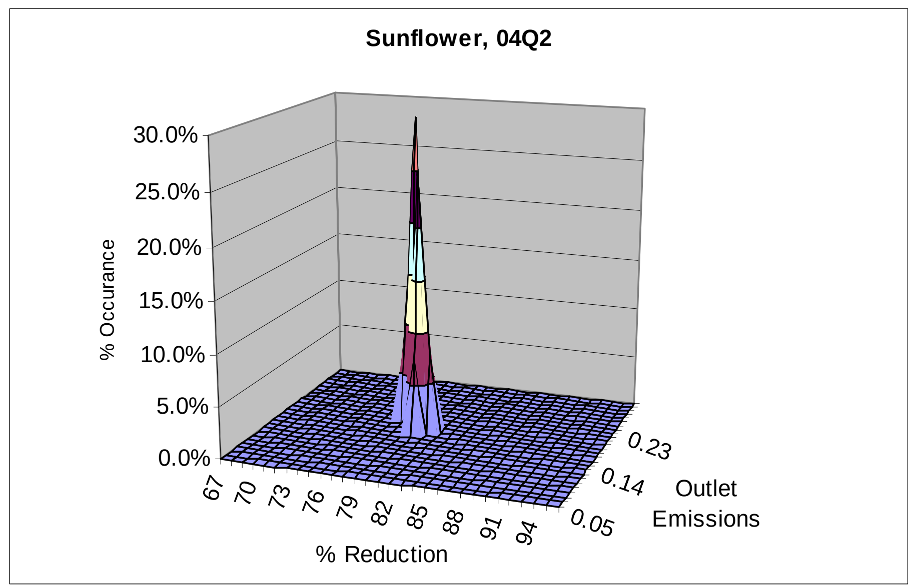
Outlet Emissions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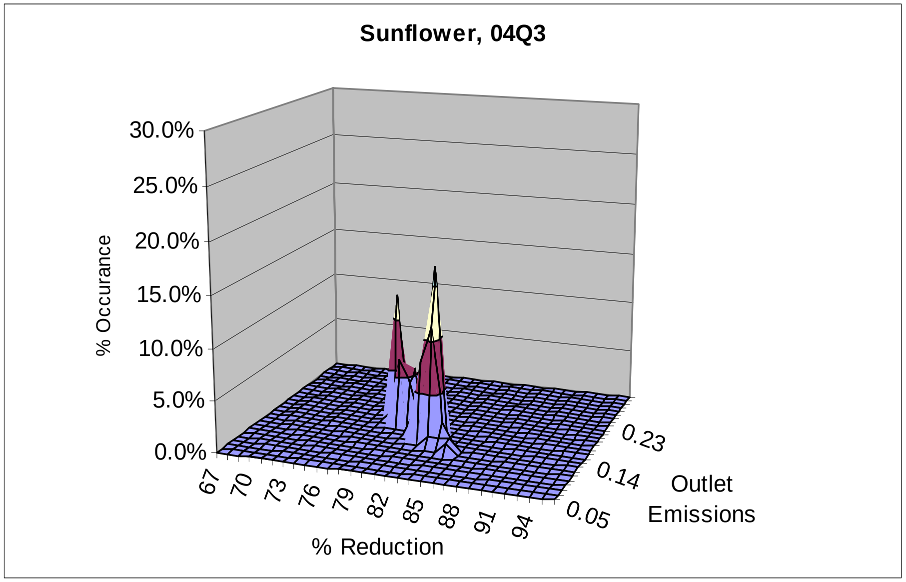
Outlet Emissions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% Occurance
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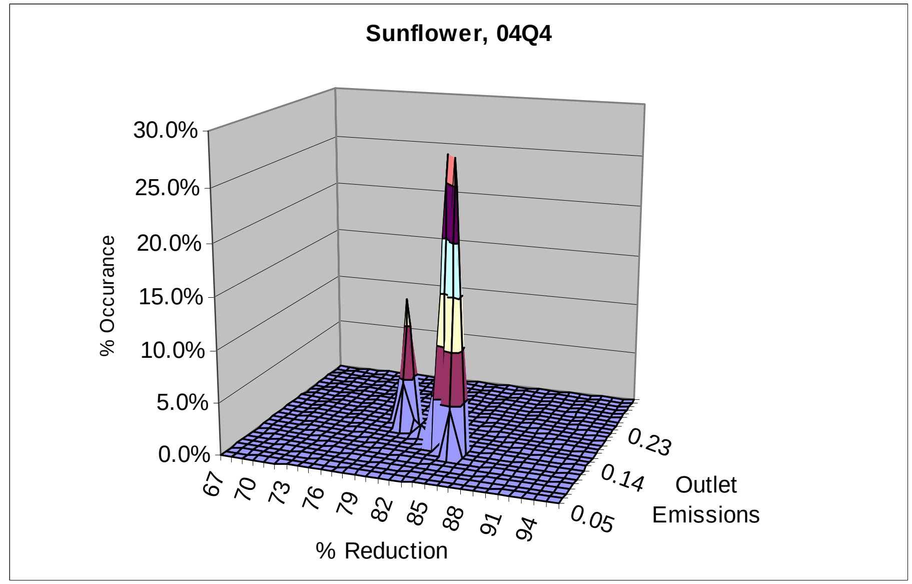
Outlet
Emissions


Sunflower, 04Q4
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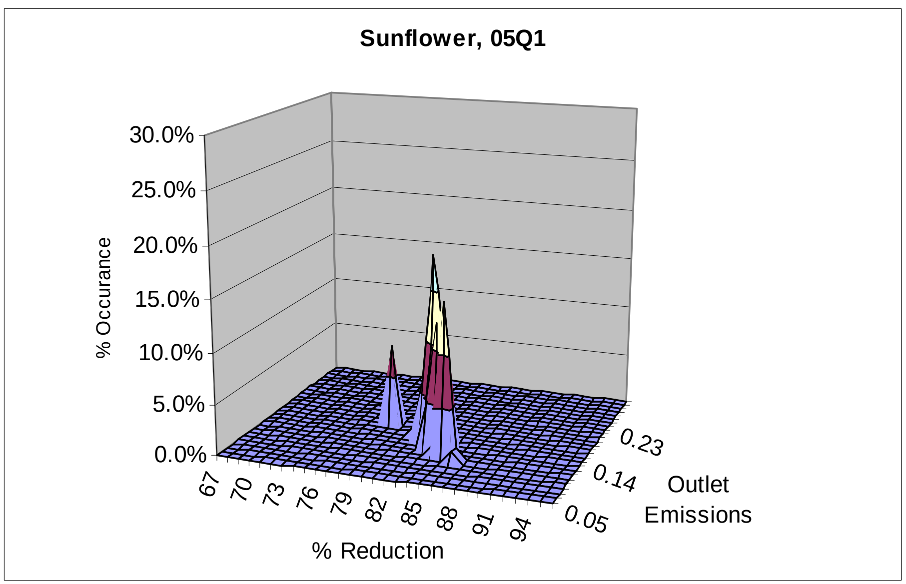
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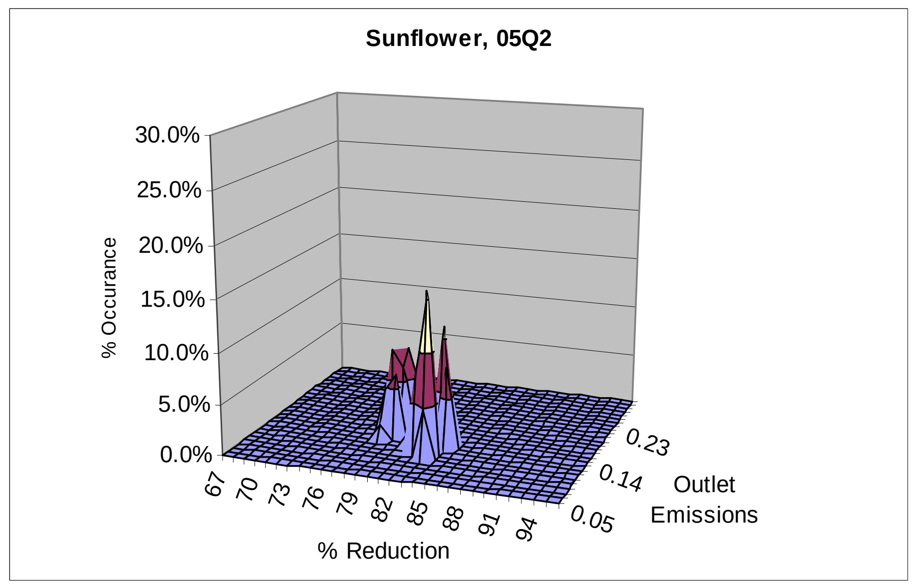
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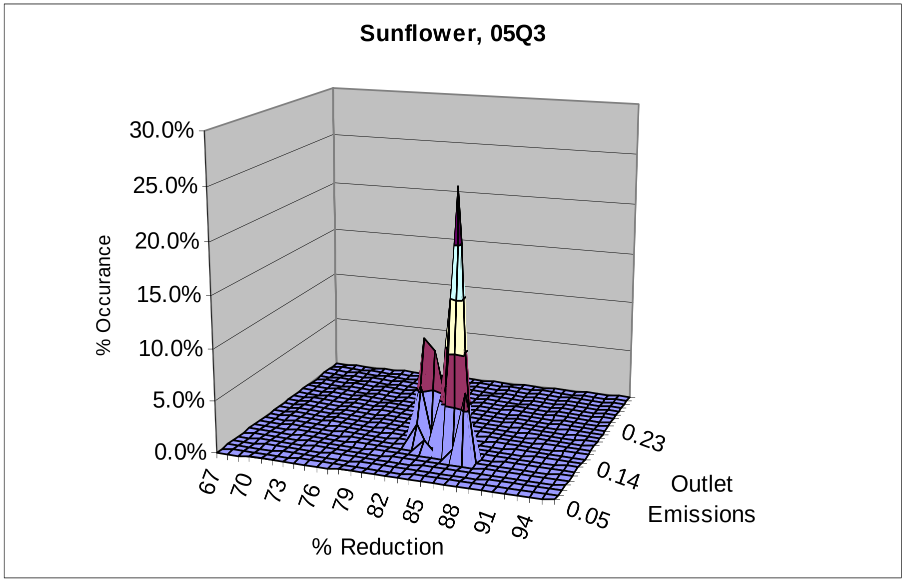
Outlet
Emissions


Sunflower, 05Q3
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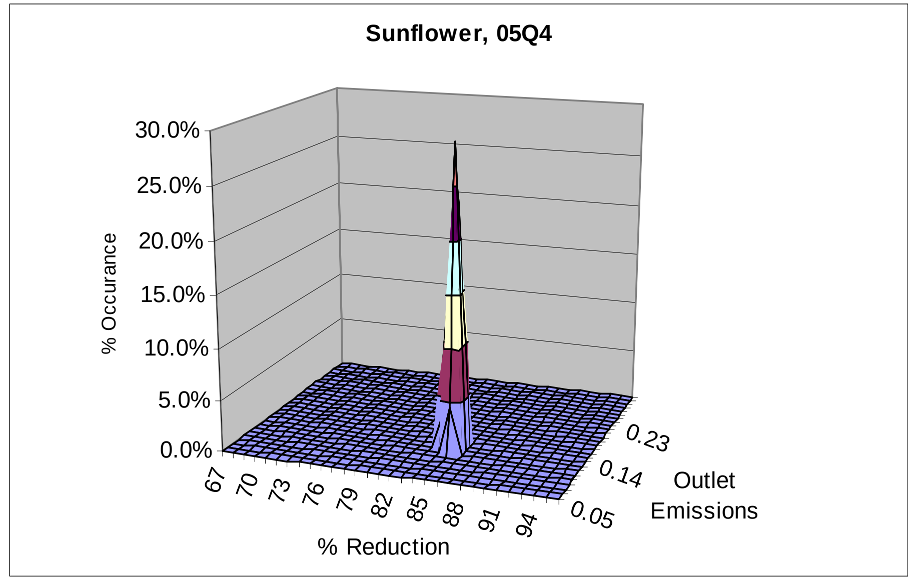
Sunflower, 05Q4
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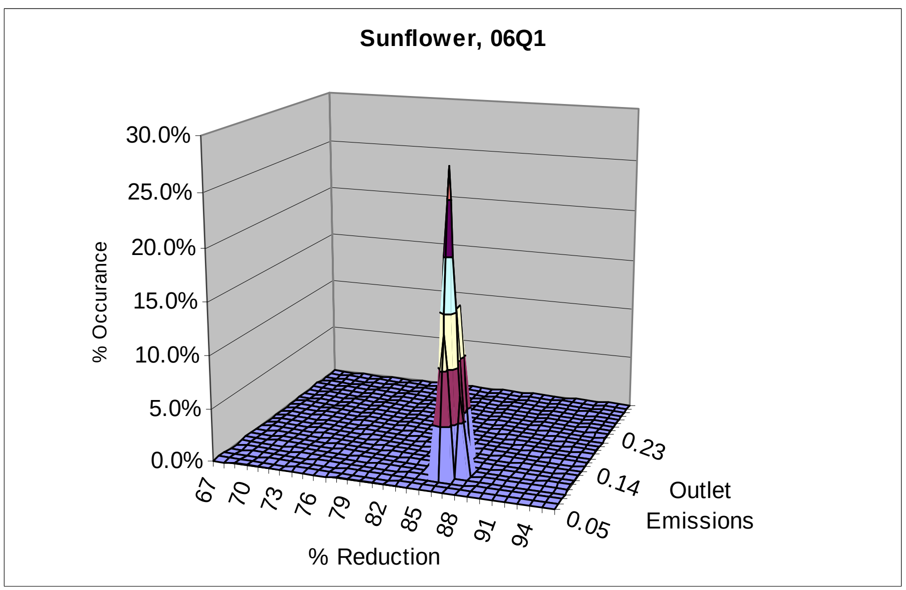
Emissions


Sunflower, 06Q1
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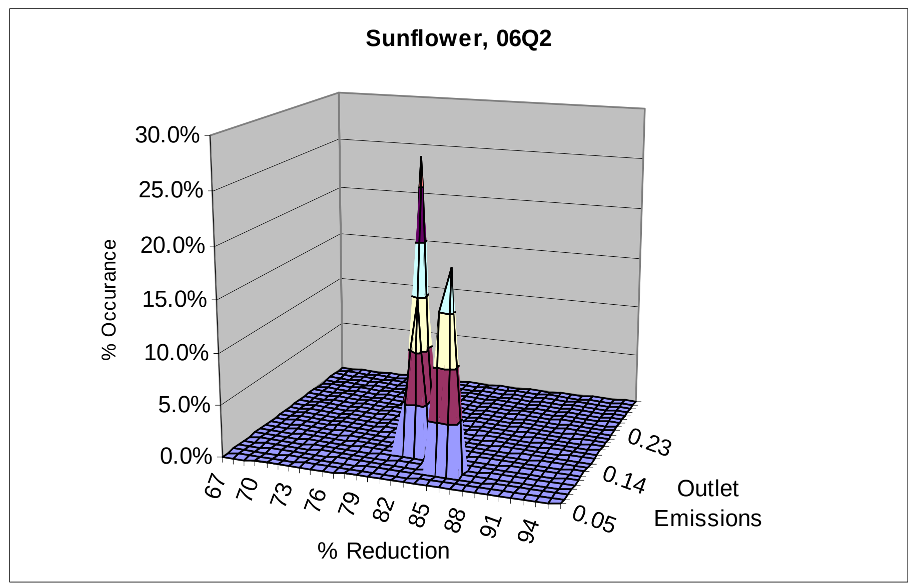
Emissions


Sunflower, 06Q2
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Outlet
Emissions

Attachment E
Burlington Northern "Guide to Coal Mines" Analysis

"Guide to Coal Mines", Burlington Northern and Santa Fe Railway

http://www.bnsf.com/markets/coal/pdf/mineguide.pdf

Coal Region	**Mine**	**Sulfur, %wt**	**GHV, Btu/lb**	**#SO2/mmBtu**	**Permitted Annual Production, million tpy**	**Permit Weighted #SO2/mmBtu**	**Annual Production, million tpy (1996)**	**Production Weighted #SO2/mmBtu**
PRB-Montana	Decker	0.40	9,500	0.84	14		11	
PRB-Montana	Bull Mountain No. 1	0.50	10,450	0.96	6		0.3	
PRB-Montana	Absaloka	0.65	8,750	1.49	7		4.7	
PRB-Montana	Rosebud	0.80	8,750	1.83	18		8	
PRB-Montana	Big Sky	0.95	8,800	2.16	5	1.41	5	1.43
PRB-Wyoming	Rochelle	0.21	8,750	0.48	30		26.2	
PRB-Wyoming	Antelope	0.22	8,800	0.50	30		12	
PRB-Wyoming	North Rochelle	0.23	8,800	0.52	15		Planned	
PRB-Wyoming	North Antelope	0.24	8,800	0.55	35		28.6	
PRB-Wyoming	Black Thunder	0.28	8,850	0.63	44		39.2	
PRB-Wyoming	Belle Ayr	0.30	8,549	0.70	25		20	
PRB-Wyoming	Caballo Rojo	0.32	8,450	0.76	30		15.1	
PRB-Wyoming	Coal Creek	0.33	8,380	0.79	10		5.8	
PRB-Wyoming	Rawhide	0.36	8,320	0.87	24		15	
PRB-Wyoming	Cordero	0.37	8,350	0.89	24		13	
PRB-Wyoming	Caballo	0.38	8,500	0.89	35		22	
PRB-Wyoming	Dry Fork	0.37	8,175	0.91	15		2.9	
PRB-Wyoming	Buckskin	0.40	8,450	0.95	20		11.9	
PRB-Wyoming	Eagle Butte	0.41	8,350	0.98	20		15.7	
PRB-Wyoming	Jacobs Ranch	0.45	8,695	1.04	35		24.6	
PRB-Wyoming	Wyodak Clovis Point	0.42	8,050	1.04	10		0.2	
PRB-Wyoming	Fort Union	0.42	7,990	1.05	8.2	**0.76**	1	**0.74**
Colorado-NM	York Canon	0.50	12,000	0.83	6		1.3	
Colorado-NM	Lorencito	0.60	12,800	0.94	2.5		Planned	
Colorado-NM	King	0.67	12,800	1.05	0.8		0.3	
Colorado-NM	McKinley	0.54	9,907	1.09	9		5.3	
Colorado-NM	Lee Ranch	0.78	9,150	1.70	6	1.13	4.3	1.27
Illinois	Rend Lake	1.10	12,100	1.82	3.5		3.3	
Illinois	Crown II	3.35	10,700	6.26	2.5	3.54	1.7	3.21
North Dakota	Freedom	0.70	6,775	2.07			15.7	
North Dakota	Beulah	0.90	7,000	2.57	4.5	2.57	2.6	2.14
Utah	Sufco	0.35	11,450	0.61			4.2	
Utah	Deer Creek	0.41	11,615	0.71			4.3	
Utah	Bear Canyon #1	0.50	12,400	0.81			0.6	
Utah	Willow Creek	0.50	11,950	0.84	5			
Utah	Soldier Canyon	0.50	11,800	0.85			1	
Utah	Skyline	0.50	11,750	0.85			4.4	
Utah	Cyprus Plateau	0.55	11,700	0.94	3		3	
Utah	Crandall Canyon	0.60	12,300	0.98			2.5	
Utah	Aberdeen	0.60	12,000	1.00		0.88	2.5	0.82
Washington	John Henry	0.80	11,800	1.36	0.33	1.36	0.19	1.36

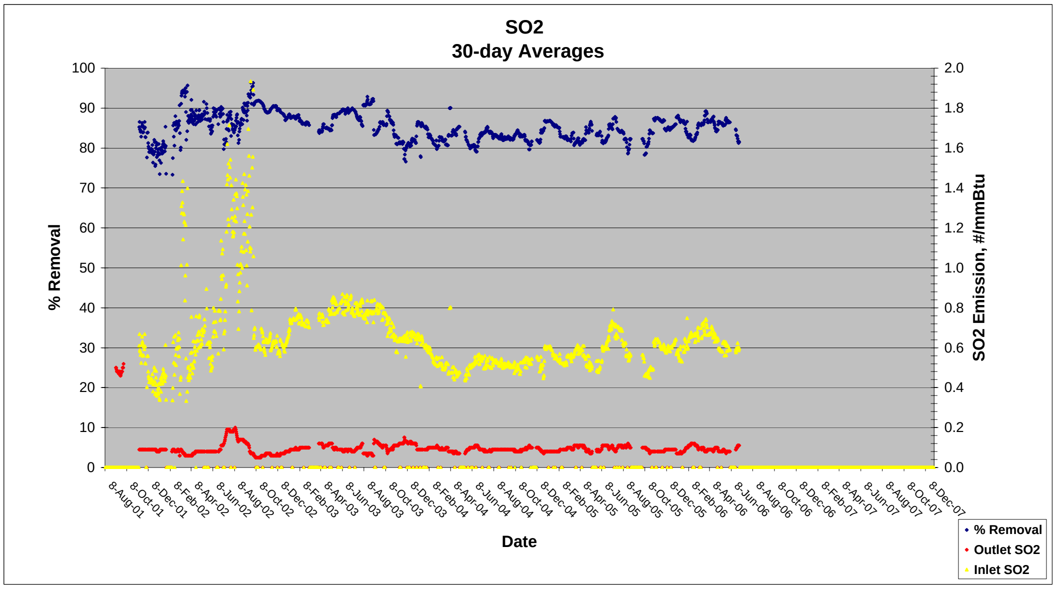
Attachment F
Portions of KCPL – Hawthorn Scrubber Analysis

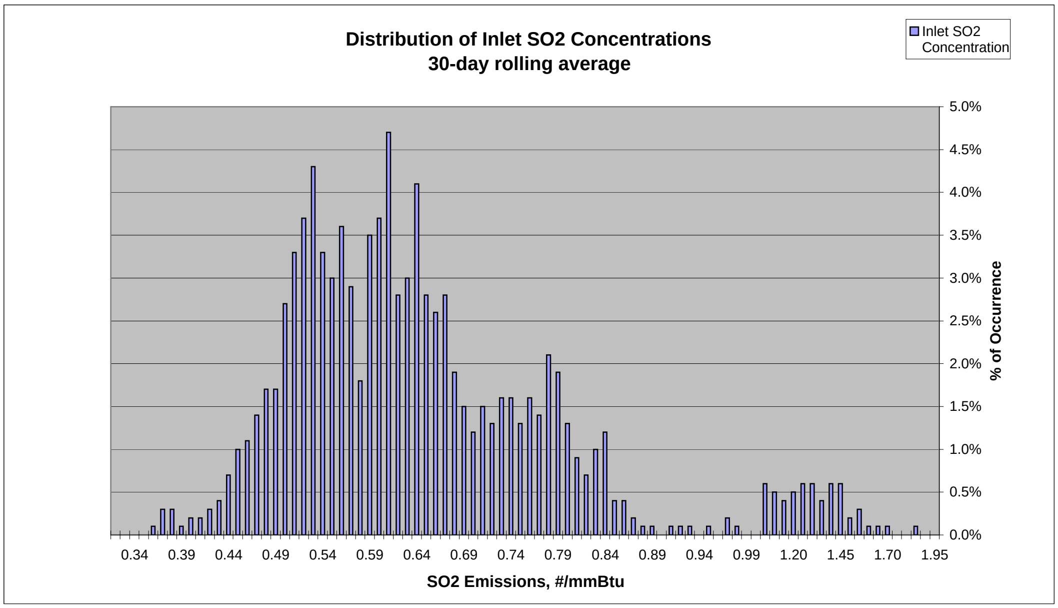
KCPL Hawthorn Unit 5A
SO2 Emissions Scrubber Performance

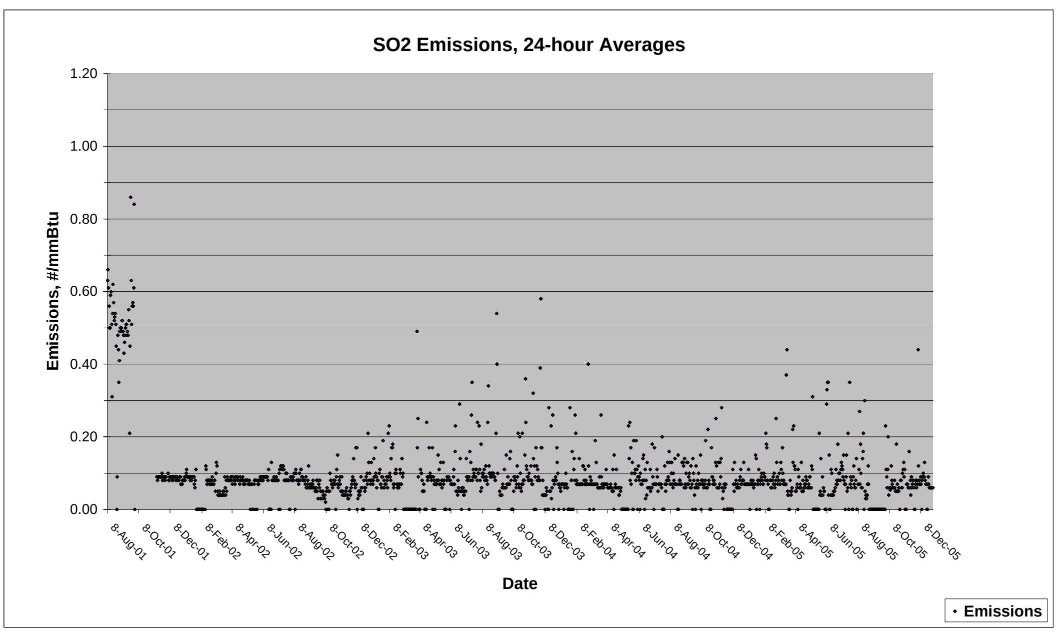
Year	Quarter	SO2 Emissions, #/mmBtu															
		0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16	0.17	0.18	0.19	0.20
2001	1	-- Not Yet Operating --															
2001	2	-- Not Yet Operating --															
2001	3	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2001	4	0%	0%	0%	2%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2002	1	0%	18%	25%	53%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2002	2	0%	14%	23%	94%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2002	3	0%	0%	10%	14%	14%	15%	24%	35%	45%	64%	67%	69%	71%	84%	99%	100%
2002	4	16%	63%	95%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2003	1	0%	0%	0%	16%	52%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2003	2	0%	0%	0%	9%	48%	63%	77%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2003	3	0%	8%	34%	45%	52%	68%	81%	91%	98%	100%	100%	100%	100%	100%	100%	100%
2003	4	0%	0%	1%	6%	20%	25%	49%	84%	96%	98%	100%	100%	100%	100%	100%	100%
2004	1	0%	0%	0%	0%	49%	95%	99%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2004	2	0%	0%	20%	54%	65%	89%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2004	3	0%	0%	0%	20%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2004	4	0%	0%	4%	39%	68%	97%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2005	1	0%	0%	0%	44%	73%	90%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2005	2	0%	0%	8%	32%	44%	62%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2005	3	0%	0%	0%	4%	15%	52%	96%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2005	4	0%	0%	2%	45%	87%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2006	1	0%	0%	19%	37%	52%	72%	90%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2006	2	0%	0%	1%	41%	77%	93%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2006	3																
2006	4																
2007	1																
2007	2																
2007	3																
2007	4																

Year	Quarter	SO2 % Removal																							
		73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
2001	1	-- Not Yet Operating --																							
2001	2	-- Not Yet Operating --																							
2001	3	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2001	4	100.0%	100.0%	100.0%	97.9%	93.6%	93.6%	87.2%	72.4%	57.5%	46.8%	44.7%	38.3%	25.5%	8.5%	4.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2002	1	100%	97%	96%	96%	94%	92%	88%	78%	67%	58%	56%	54%	50%	44%	36%	29%	25%	24%	24%	21%	21%	18%	4%	1%
2002	2	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	96%	92%	82%	55%	26%	13%	3%	1%	0%	0%	0%	0%
2002	3	100%	100%	100%	100%	100%	100%	100%	100%	99%	93%	90%	89%	84%	74%	63%	52%	40%	30%	24%	16%	16%	9%	6%	3%
2002	4	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	95%	90%	61%	32%	16%	0%	0%	0%	0%
2003	1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	66%	48%	2%	0%	0%	0%	0%	0%	0%	0%
2003	2	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	87%	65%	60%	60%	43%	13%	0%	0%	0%	0%	0%	0%
2003	3	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	97%	90%	83%	70%	59%	51%	44%	34%	11%	1%	0%	0%	0%
2003	4	100%	100%	100%	100%	100%	96%	95%	94%	89%	58%	44%	33%	31%	31%	16%	10%	5%	0%	0%	0%	0%	0%	0%	0%
2004	1	100%	100%	100%	100%	100%	100%	98%	98%	94%	71%	46%	26%	26%	16%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2004	2	100%	100%	100%	100%	100%	100%	100%	94%	82%	65%	55%	34%	21%	6%	6%	6%	6%	6%	0%	0%	0%	0%	0%	0%
2004	3	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	70%	31%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2004	4	100%	100%	100%	100%	100%	100%	100%	100%	97%	84%	57%	31%	9%	4%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2005	1	100%	100%	100%	100%	100%	100%	100%	100%	100%	94%	71%	51%	44%	30%	18%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2005	2	100%	100%	100%	100%	100%	100%	100%	100%	100%	82%	53%	38%	18%	11%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2005	3	100%	100%	100%	100%	100%	100%	100%	94%	88%	85%	63%	63%	38%	29%	17%	6%	0%	0%	0%	0%	0%	0%	0%	0%
2005	4	100%	100%	100%	100%	100%	100%	96%	93%	90%	84%	77%	77%	62%	35%	32%	4%	0%	0%	0%	0%	0%	0%	0%	0%
2006	1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	89%	72%	65%	62%	34%	18%	6%	0%	0%	0%	0%	0%	0%	0%
2006	2	100%	100%	100%	100%	100%	100%	100%	100%	100%	97%	93%	88%	81%	74%	39%	5%	0%	0%	0%	0%	0%	0%	0%	0%
2006	3																								
2006	4																								
2007	1																								
2007	2																								
2007	3																								
2007	4																								

KCPL Hawthorn Unit 5A







Attachment G
Excerpt from City Utilities of Springfield
"BACT Emission Limitations for PC Boilers Firing Western Subbituminous Coal"

BACT Emission Limitations for PC Boilers Firing Western Subbituminous Coal

Sulfur Dioxide Emissions:

The BACT analysis that City Utilities submitted to the Missouri DNR concluded that BACT for SO_2 at Southwest Unit 2 was 0.12 lbs/mmBtu on a 30-day rolling average basis. This conclusion was based on the proven control capabilities of dry FGD systems on PRB coal-fired units.

Subsequent to the submittal of the PSD permit application, MDNR has requested that City Utilities investigate the feasibility of achieving an SO_2 emission level of 0.10 lbs/mmBtu with a dry FGD system.

Evaluating the feasibility of achieving an SO_2 emission rate of 0.10 lbs/mmBtu for Southwest Unit 2 is a two step process. The first step is to consider the technical feasibility of meeting the 0.10 lb/mmBtu limit. If it is determined to be technically feasible, then environmental, energy and economic factors are considered.

Technical Feasibility

The technical feasibility evaluation must consider the potential fuels that may be fired at Southwest Unit 2. CU is planning on firing PRB coals in the unit which inherently have low sulfur content. As part of the original BACT analysis, potential sources of the PRB-coal were evaluated. This evaluation determined that fuel for Southwest Unit 2 may have sulfur content up to 0.60 percent with a higher heating value of 8200 Btu/lb. This corresponds to maximum uncontrolled emissions of 1.462 lbs of SO2/mmBtu. The original fuel analysis for Southwest Unit 2 remains valid and is the basis for evaluating achieving an emission rate of 0.10 lbs/mmBtu for the unit.

The next area to consider when evaluating the feasibility of achieving SO2 emissions of 0.10 lbs/mmBtu is the removal capabilities of dry FGD. Virtually all dry FGD systems installed on units over 100 MW are spray dryers. Spray dryers include either rotary atomizers or dual fluid nozzles to atomize the lime slurry to achieve good gas-to-liquid contact.

Good gas-to-liquid contact is essential to obtain high control efficiencies. The maximum control efficiency that has been guaranteed for a spray dryer/fabric filter FGD system installed on a coal-fired utility boiler is 94 percent (Hawthorn 5 – 94%, Council Bluffs 4 – 93.6%). These are very large units that require multiple absorber modules. Having multiple absorber modules provides an additional level of redundancy which is not practical for smaller units such as Southwest Unit 2.

Obtaining this high removal efficiency is dependent not only on good gas-to-liquid contact, but, also on how closely the absorber outlet temperature approaches the adiabatic saturation temperature. Operating closer to the adiabatic saturation temperature allows higher SO_2 control efficiencies.

There are process limitations on how close a spray dryer can be operated to the adiabatic saturation temperature. If the outlet temperature from a spray dryer is too close to the saturation temperature, a number of operating problems will occur. These include build-up in the absorber modules, blinding of fabric filter bags, corrosion in the fabric filter and ductwork, and operating and maintenance problems with the fly ash handling system.

The limit on how close a spray dryer outlet temperature can safely approach the adiabatic saturation temperature is around 25 degrees F. Operating at closer approach temperatures results in severe operating problems. Most spray dryers are operated with outlet temperatures 30-40 degrees above the saturation temperatures. Even at these higher operating temperatures, absorber build-up, corrosion of the fabric filter and ductwork and fly ash handling issues have been common problems for dry FGD systems.

Continuously maintaining 94 percent control on a unit with a dry FGD would be difficult, if not impossible, to accomplish and has not been demonstrated on any existing unit. Achieving 94 percent control requires a well designed absorber that has good liquid-to-gas contact and the ability to continuously operate at an approach temperature 25 degrees F above saturation. There are no utility units with spray dryers that continually operate at control efficiencies approaching 94 percent. There are a very few facilities that have been continuously able to achieve a SO_2 control efficiency of 90 percent.

The large majority of coal-fired utility installations have used rotary atomizers. Installations with rotary atomizers have been more successful in achieving high removal efficiencies than units with dual fluid nozzles. Atomizers (rotary and dual fluid nozzle) are high maintenance pieces of equipment, that are subject to severe erosion and pluggage conditions. Periodically, the atomizers must be changed out for inspection and cleaning. During change out of the atomizers, SO_2 emissions from the unit will be higher.

Most operators of spray dryers have an established maintenance program to change out the atomizers for inspection, cleaning and repair on a regularly scheduled basis. It is common to change rotary atomizers out at monthly intervals. Dual fluid nozzles are likely to require more frequent change out. In addition to normal atomizer maintenance, it is relatively common for emergency conditions to occur at spray dryer facilities that require the immediate change out of atomizers.

According to manufacturers, a planned change-out of an atomizer should take 2 to 3 hours to complete. Change out of an atomizer under emergency conditions will likely take longer. Typically, a spray dryer may be out of service 2 to 3 hours per month to allow for scheduled atomizer maintenance. However, it is fairly common for a spray dryer to be out of service for additional hours in a month due to unanticipated equipment problems and maintenance.

Establishing a permitted emission rate for a unit needs to take into account the maximum sulfur fuel that can be fired and the impact of normal and common maintenance activities. Several scenarios were developed to evaluate the impact of spray dryer operating conditions that may be reasonably expected to occur in the course of a year.

The first scenario evaluated assumed an accumulation of 10-hours of spray dryer outage during a 30-day averaging period. During the remainder of the month, the spray dryer was assumed to operate at the maximum achievable control efficiency for a spray dryer of 94 percent. This scenario is summarized in Table No. 1:

Table No. 1

Hours of Operation	SO2 Emission Rate (lbs/mmBtu)
710	0.088
10	1.462
30-Day Average	0.107

Table No. 2 illustrates the emissions that would result during a 30-day period from a scenario if only one scheduled atomizer change out is required and during the remainder of the month a control efficiency of 94 percent is maintained.

Table No. 2

Hours of Operation	SO2 Emission Rate (lbs/mmBtu)
717	0.088
3	1.462
30-Day Average	**0.094**

The scenarios provided in Tables 1 and 2 assume that a SO_2 removal efficiency of 94 percent can be continuously maintained when the spray dryer is in service. This is not a technically feasible assumption. A 94 percent control level is the best that can be accomplished with a spray dryer/fabric filter system. It requires that the absorber outlet temperature be maintained within 25 degrees of the adiabatic saturation temperature. Continuous operation at this temperature can result in severe operating problems and reduced control equipment reliability. Unexpected operating conditions will occur to prevent peak removal efficiency.

In order to further evaluate the control capabilities of operating spray dryer/ fabric filter systems, 2003 CEMS data were reviewed from a number of units that were designed to achieve SO_2 control levels above 90 percent. This review of CEMS data revealed that the highest continuous SO_2 control level maintained on any of the units was approximately 90 percent (Tri-States Craig 3, Platte River Rawhide). A continuous control level of slightly under 90 percent has been maintained on Hawthorn 5.

Table No. 3 provides projected emissions for a 30-day period with only a normal, scheduled atomizer change out and maintaining 90 percent control efficiency during the remainder of the month.

Table No. 3

Hours of Operation	SO_2 Emission Rate (lbs/mmBtu)
717	0.146
3	1.462
30-Day Average	**0.151**

Although the highest demonstrated continuous SO_2 control level achieved by units with spray dryers/fabric filters is approximately 90 percent, we believe that with proper design operation and maintenance, somewhat higher levels of control can be maintained. Table No. 4 provides projected monthly emissions with only one scheduled, normal atomizer change out and 92 percent control for the remainder of the period.

Table No. 4

Hours of Operation	SO_2 Emission Rate (lbs/mmBtu)
717	0.117
3	1.462
30-Day Average	**0.123**

Table No. 5 provides a summary of the spray dryer operating scenarios.

Table No. 5

Scenario	Operating Removal Efficiency (%)	Spray Dryer Outage Hrs./Month	30-Day Average Emissions (lbs/mmBtu)
1	94	10	0.107
2	94	3	0.094
3	90	3	0.151
4	92	3	0.123

The above scenarios illustrate that it is unlikely that a 30-day rolling SO_2 average of 0.10 lbs/mmBtu could be achieved at Southwest Unit 2. A 3-hour spray dryer outage during a month adds over 0.006 lbs/mmBtu to the 30-day rolling average emissions. Achieving an emission rate of 0.10 lbs/mmBtu requires 94 percent control and monthly spray dryer outages limited to one 3-hour period for normal, scheduled atomizer maintenance. Even achieving an emission rate of 0.12 lbs/mmBtu requires the control efficiency to be maintained above 92 percent and the atomizer change outs limited to one per 30-day period.

Conclusions

Southwest Unit 2 is projected to have a service life of over 30-years. During this life span the unit must be continuously operated within the emission limits required by the operating permit. The permit limit established by BACT must not be lower than is technically feasible for the control method.

In the above analysis, consideration has been given to the technical feasibility of maintaining a SO_2 emission rate of 0.10 lbs/mmBtu with a spray dryer/fabric filter system on Southwest Unit 2. Achieving an emission rate of 0.10 lbs/mmBtu on a 30-day rolling average basis requires continual operation at a 94 percent control level with only one atomizer change out during a 30-day averaging period. This scenario is not technically feasible for Southwest Unit 2.

Attachment H
Excerpts from
Draft PSD permit for Longleaf Energy Associates, LLC
C/o LS Power Development, LLC
http://www.air.dnr.state.ga.us/airpermit/psd/dockets/longleaf/index.htm

Conclusions for SO_2

[Excerpted from Georgia DNR "Preliminary Determination" for LS Power Longleaf Energy draft PSD permit.]

The Division has determined that the proposal to use a dry scrubber in combination with burning of low sulfur PRB coal to meet the requirements of BACT is acceptable. The Division has determined that the proposed SO_2 BACT emission limit of 0.12 lb/mmBtu is not acceptable. The Division has reviewed a permit for Newmont Nevada Energy Investments, LLC which details an innovative two-tiered SO_2 BACT limit. This two-tiered limit has different limits based on the sulfur content of the coal. If Longleaf accepts this two-tiered SO_2 limit it would be the third most stringent SO_2 emission limit for Pulverized Coal Boilers burning low sulfur western or PRB Coal. The Division proposed this two tiered limit to Longleaf in a letter dated February 23, 2006 requesting that Longleaf examine this approach and develop a similar tiered limit for the facility. Longleaf responded in a letter dated February 23, 2006 with the following three tiered SO_2 BACT limit.

· For uncontrolled SO_2 emissions less than or equal to 1.0 lb/mmBtu, the PC-fired boilers will not exceed 0.065 lb/mmBtu (30-day rolling average)
· For uncontrolled SO_2 emissions greater than 1.0 but less than 1.25 lb/mmBtu, the PC-fired boilers will not exceed 0.08 lb/mmBtu (30-day rolling average)
· For uncontrolled SO_2 emissions greater than 1.25 but less than 1.6 lb/mmBtu, the PC-fired boilers will not exceed 0.105 lb/mmBtu (30-day rolling average)
· The PC-fired boilers will not exceed 0.12 lb/mmBtu on a 24-hour average.
· The scrubbers will maintain 93.5% removal of SO_2.

The SO_2 BACT emission limit is set as stated above. The Division believes that this determination is consistent with recent BACT determinations.

Condition 2. Allowable Emissions

[Excerpted from Georgia DNR "Draft Permit" for LS Power Longleaf Energy project]

2.14 The Permittee shall not discharge, or cause the discharge, into the atmosphere, from each PC-Fired Boiler, S01 and S02, any gases which

d. Contain sulfur dioxide in excess of 0.065 lb/mmBtu on a 30-day rolling average when the uncontrolled sulfur dioxide emission rate is less than or equal to 1 lb/mmBtu on a 30-day rolling average. [40 CFR 52.21(j); 40 CFR 60.43a(i) (subsumed); 391-3-1-.02(2)(d) (subsumed)]

e. Contain sulfur dioxide in excess of 0.08 lb/mmBtu on a 30-day rolling average when the uncontrolled sulfur dioxide emission rate is greater than 1 lb/mmBtu but less than 1.25 lb/mmBtu on a 30-day rolling average. [40 CFR 52.21(j); 40 CFR 60.43a(i) (subsumed); 391-3-1-.02(2)(d) (subsumed)]

f. Contain sulfur dioxide in excess of 0.105 lb/mmBtu on a 30-day rolling average when the uncontrolled sulfur dioxide emission rate is greater than 1.25 lb/mmBtu but less than 1.6 lb//mmBtu on a 30-day rolling average. [40 CFR 52.21(j); 40 CFR 60.43a(i)

(subsumed); 391-3-1-.02(2)(d) (subsumed)]
g. Contain sulfur dioxide in excess of 0.12 lb/mmBtu on a 24-hour average. [40 CFR 52.21(j); 40 CFR 60.43a(i) (subsumed); 391-3-1-.02(2)(d) (subsumed)]